

UNITED STATES DEPARTMENT OF AGRICULTURE
AGRICULTURAL RESEARCH SERVICE
NORTHEASTERN REGION
AGRICULTURAL RESEARCH CENTER
BELTSVILLE, MARYLAND 20705

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NOTES FROM THE DIRECTOR

No. 26

January 3, 1974

Employee Activities

The Animal Parasitology Institute hosted the 478th Meeting of the Helminthological Society of Washington on November 16. After a brief business meeting, presided over by Dr. H. Herlich, Chief, Ruminant Helminthic Diseases Laboratory, there was a scientific program chaired by Dr. F. Stringfellow. Papers were presented on sarcocystis infections in calves by R. Fayer, trichinosis in pigs by R. S. Isenstein, and tapeworm infections in horses by J. R. Lichtenfels. Dr. R. S. Isenstein was elected Vice-President of the Society for 1974.

Dr. Alexej B. Borkovec, Insect Chemosterilants Laboratory, presented an invited paper entitled "Chemosterilization of the Boll Weevil" at the Insecticide Society of Washington in Beltsville, on November 20.

Two scientists in the Nematology Laboratory, PPI, were recently elected as officers of the Helminthological Society of Washington for 1974. Dr. A. Morgan Golden was chosen to serve a second term as Recording Secretary and Dr. William R. Nickle was elected as Corresponding Secretary-Treasurer.

Phil Breakiron, Chief, Transportation and Packaging Research Laboratory, was recently invited to participate in a forum on "Distribution Service Requirements" at the National Frozen Food Convention in Miami Beach this month. While in Florida for this purpose, Mr. Breakiron will meet with other ARS scientists in Miami and Orlando, and in Byron, Georgia.

On November 7, 1973, Dr. Lloyd Knutson, Chairman, Insect Identification and Beneficial Insect Introduction Institute, and Miss Rose Ella Warner and Mr. T. J. Spilman, Systematic Entomology Laboratory of IIBIII, took part in a taped interview to be broadcast over Radio Smithsonian. The subject of discussion was insect taxonomy and biological control by use of natural enemies.

Mr. R. W. Spjut departed Beltsville in early October to continue the Medicinal Plant Resources Laboratory's field program in East Africa. Spjut's attention will be focused largely in a phytogeographically isolated area in the southern highlands of Tanzania. This very rich area of about 200 square miles, with great diversity of vegetation due to rainfall variation from 10 to 80 inches per year, yielded 1,700 plant materials for

cancer screening in 1971. Spjut's mission will be to procure large amounts of those plants that have shown confirmed anticancer activity. These samples will be used for chemical fractionation to isolate and identify active agents.

Mr. C. J. Nicholas of the Transportation and Packaging Research Laboratory was recently invited by the Defense Supply Agency to visit the Defense Supply Facility in Bayonne, New Jersey, for technical assistance on a test shipment of two van containers of mature green tomatoes to Europe. He provided recommendations on proper loading methods as well as temperature requirements during transit to Germany. The product originated in Florida, was transported to Bayonne by highway trailer, and was transferred to the van containers.

Dr. Donald T. Krizek, Plant Stress Laboratory, recently attended the American Society for Horticultural Science Meetings in Raleigh, North Carolina, where he was elected Chairman of the ASHS Special Committee on Growth Chamber Environments. He presented a paper entitled "High light intensity breaks seed dormancy in semi-dwarf Browallia" co-authored by Peter Semeniuk of the Ornamentals Laboratory. He also served as Chairman of a session on "Plant Growth and Development."

Dr. Rolland M. Waters, Biologically Active Natural Products Laboratory, presented an invitational seminar on "Insect Sex Pheromones" for members of a class in pesticide chemistry in the Food and Drug Administration, Washington, D. C.

Mr. Martin Jacobson, Biologically Active Natural Products Laboratory, presented an invitational seminar on "Insect Sex Pheromones" before the Department of Chemistry, University of Hawaii, on December 7, while on work travel in Hawaii.

Dr. J. W. Neal, Jr., Applied Plant Genetics Laboratory, attended the 45th annual meeting of the Eastern Branch Entomological Society of America in New York City, October 31-November 2, and chaired a symposium on "Contributions of Genetics to Insect Control." He will serve as the program committee chairman for the 1974 meeting. Dr. Neal also attended the national meeting of the ESA in Dallas, November 25-29. He petitioned the Society to publish "A Manual for Determining Small Dosage Calculations of Pesticides and Conversion Tables" as an ESA Special Publication.

Dr. R. H. Ratcliffe, Applied Plant Genetics Laboratory, was invited to speak at the Department of Entomology seminar at Pennsylvania State University, November 5. His subject was "Host Plant Resistance to Insects." While at University Park, Dr. Ratcliffe also visited with personnel at the ARS Pasture Research Laboratory and discussed cooperative research on forage and legume insect problems.

BARC SCIENCE SEMINAR

Dr. Sidney W. Fox, Director of the Institute of Molecular Evolution, University of Miami, Coral Gables, Florida, presented a BARC Seminar on Wednesday, December 12, 1973, on "The Origin of Primordial and Contemporary Cells." Dr. Fox reviewed current concepts on the origin of life in the Universe and presented some new data on organic molecules extracted from moon rocks. Dr. Fox also showed an interesting film which depicted a possible model for the origin of proteinaceous particles derived from erupting volcanic rock, followed by rain that extracts the proteinaceous material formed in the hot molten rock.

Honors and Awards

Dr. Julius Feldmesser, Nematology Laboratory, has received dual appointments from the Society of Nematologists and the Weed Science Society of America to serve as official liaison representative between both groups. His duties will be to report information and developments of mutual interest to SON's Executive Committee and WSSA's Board of Directors, and to take part in activities that help reinforce the common goals of the two Societies and the disciplines they represent. Dr. Feldmesser is also chairman of SON's Crop Losses Committee.

Cooperative Activities

"Astro-Moths" Orbiting Earth: One thousand gypsy moth eggs were launched aboard Skylab 4 on November 16 as part of a research project sponsored by the U.S. Department of Agriculture's Agricultural Research Service (W. N. Sullivan, D. K. Hayes, and M. S. Schechter) and the Animal and Plant Health Inspection Service (T. McIntyre) in cooperation with NASA (D. Morrison). Diapause (hibernation) of the gypsy moth lasts 150-180 days--considerably dragging out the period required for rearing large numbers of insects to be used for a sterile male release program. Weightlessness, known to affect plant seedlings, is being tested to see if it will break diapause in a shorter than normal time.

Thesis Examiner: Dr. Charles D. Foy recently served as external examiner for a Ph.D. Thesis candidate in the Department of Soil Science at the University of Alberta, Edmonton, Alberta, Canada. The thesis concerned subsoil acidity in relation to plant root development. While at Edmonton, Dr. Foy also conducted an invitational seminar entitled "Differential Responses of Plant Genotypes to Mineral Stress Factors in Acid Soils."

Program Financed to Improve Food Marketing in Colombia, S. A.: The Inter-American Development Bank has announced the approval of a \$6 million loan to improve the wholesale food marketing systems of three of Colombia's major cities. The total cost of the project is estimated at \$12 million. This project is part of a broad program to improve food distribution and marketing in South American countries by improving the facilities and methods used, and was patterned after work done by the Food Distribution Research Laboratory in cities in the United States.

Plants with Insect Attractants and Inhibitors: Joint investigations between the Biologically Active Natural Products Laboratory and the Medicinal Plant Resources Laboratory have resulted in the discovery of plants with outstanding biological activity as insect attractants and as inhibitors of insect development. MPRL provided 650 selected plant materials for screening, all of which were known to produce agents that inhibit cancer growth in laboratory animals. Of these, seven proved highly attractive to female fruit flies that destroy citrus in Hawaii, Europe, and the Middle East. Extracts of three plants disrupted the normal development of insect pests of stored grain. BANPL chemists are proceeding to isolate and identify the active components.

Crash Program for Insect Attractants: Mr. Martin Jacobson, Biologically Active Natural Products Laboratory, attended a collaborative research conference with members of the Hawaiian Fruit Flies Laboratory at Honolulu, December 3-6, and participated in the field evaluation of the Mediterranean fruit fly sex pheromones in coffee-growing areas on the Kona coast of the large island of Hawaii. Plans were made for a crash program to discover new urgently needed attractants for females of the highly destructive Mediterranean fruit fly, oriental fruit fly, and melon fly.

Visitors

Dr. Arthur Seidenberg and a group of 20 students of parasitology from the Virginia Commonwealth University at Richmond visited the Animal Parasitology Institute on November 16. The group was given brief presentations on the mission of the Institute and of the research programs of the Ruminant and Non-Ruminant Helminthic Diseases Laboratories. The students were provided with an on-site view of the operations of some phases of the two laboratories.

Mr. William Cragg of Kent, England, visited with Drs. Draper and Scott, Fruit Laboratory, on November 23 and 27 to discuss propagation of registered virus-free strawberry plants. Mr. Cragg is one of three strawberry foundation stock growers in England who supplies elite and registered stocks to other strawberry nurserymen and is interested in mechanization for handling plants. On November 27 Mr. Cragg visited commercial nurseries on the Eastern Shore with Draper and Scott where he saw how large scale propagation of strawberry plants is handled by American nurserymen.

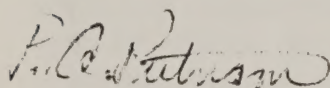
Mr. F. A. Roach, former fruit specialist of the British National Advisory Service, visited the Fruit Laboratory on November 30 to discuss strawberry growing and dwarf apple tree production. Mr. Roach recently served as an advisor to the World Bank on the establishment of strawberry and asparagus production in South Korea.

Mr. Kenneth E. Lyon, Vice President, Alta Lipids Ltd., Boise, Idaho, visited the Biochemistry Laboratory on November 15 and 16. He met with Joel Bitman, Randall Wrenn and Leslie Dryden and discussed experimental details of a current cooperative project in which the Alta-Lipid feed supplement is being used to produce polyunsaturated milk at Beltsville.

Dr. Barbara Holcman-Spector of the Universidad de Montevideo, Uruguay, visited the Animal Parasitology Institute December 4. She spent the afternoon in Dr. J. R. Lichtenfel's Laboratory studying specimens in the National Parasite Collection. Dr. Holcman-Spector has agreed to deposit paratypes of parasites collected in Uruguay in the U.S. National Parasite Collection and an exchange of literature was arranged.

Putting Research To Work

Recent Report Important to Beltsville Researchers: The Analytical Chemistry Laboratory has found that barely visible scoring of a cylindrical electron collector probe had profound effects on the performance of an electron capture detector in gas chromatography: electronic noise was increased greatly; the relationship of response to applied voltage was reversed; and the optimum distance between the probe and the radioactive source was shifted widely. Micro-imperfections had little effect on noise and response levels, but they did cause serious baseline instability. Instrumental error of as much as + 50% due to such imperfections can be eliminated by polishing the collector probe.



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NOTES FROM THE DIRECTOR

No. 27

January 31, 1974

Employee Activities

Three Laboratory Chiefs - 105 Years of Service:

Dr. Louis Feinstein, Chief of the Seed Quality Laboratory, AMRI, retired December 31 after 35 years of Government service. Prior to the reorganization, he worked for many years in the Field Crops and Animal Products Research Branch of the Market Quality Research Division serving as Branch Chief from 1967 to 1972. In addition, he served as a contact member of the Joint Board on Science Education for the Washington Area. He and his wife (who retired at the same time) are traveling and visiting with friends and relatives.

After nearly 35 years of service to the poultry industry, John A. Hamann, Chief of the Dairy and Poultry Products Marketing Laboratory, AMRI, retired effective December 31. Prior to becoming Laboratory Chief he served as an Investigations Leader for Poultry Investigations in the Transportation and Facilities Research Division. John plans to continue to be active in work for the poultry industry during his retirement.

John W. Mitchell, Chief of the Plant Hormone and Regulators Laboratory, retired on December 31 after 35 years of service with the U.S. government. He began his career in 1938 as an Associate Physiologist with the Bureau of Plant Industry, Soils and Agricultural Engineering. In 1956 he was associated with the Horticultural Crops Research Branch, Crops Research Division, and in 1959 was placed in charge of the Growth Regulator and Antibiotic Laboratory, Crops Protection Research Branch. In 1963 he was made Leader of Plant Hormone and Regulator Pioneering Research Laboratory, Crops Research Division, and served in this capacity until the reorganization in 1972. Since that time, he has served as Laboratory Chief. Dr. Mitchell culminated his career with a recent discovery of a new family of plant hormones, the brassins, which are greatly different chemically from those previously known to science.

Invitational Papers

Polyunsaturates: Dr. Joel Bitman, Biochemistry Laboratory, presented an invited paper entitled "Production of Dairy Products with Polyunsaturated Fatty Acids and Low Cholesterol Eggs" at the New York Institute of Food Technologists meeting on January 15 at Alpine, New Jersey. The meeting theme was "Tomorrow's New Products from Today's Government Research" and 11 Government scientists from Agriculture, Commerce, and Defense presented papers to about 200 food chemists and technologists from the New York City area.

Genetic Structure: Dr. William Cantelo of the Vegetable Laboratory presented an invitational paper on "Modifying the Genetic Structure of Insect Populations Through the Use of Compound Chromosomes" at a symposium titled "Contributions of Genetics to the Control of Insects" held at the Eastern Branch Meeting of the Entomological Society of America in New York City in November.

BARC SEMINAR

Dr. Howard M. Temin of the University of Wisconsin presented the Science Seminar Lecture for January at the BARC Auditorium on January 9. Dr. Temin discussed evidence concerning the evolutionary origin of viruses in avian species. His thesis is that viruses derive from specific DNA which would explain the specificity of virus diseases to a given species and its genetic relatives. The data supporting this hypothesis was derived from hybridization studies between purified virus species and purified DNA obtained from various avian species. The lecture was attended by over 250 and was well received.

The next Science Seminar Lecture will be presented by Dr. James E. Darnell of Columbia University on Tuesday, February 26 at 2:30 P.M. in the BARC Auditorium. Dr. Darnell's topic will be "Messenger RNA Biosynthesis in Mammalian Cells." All are invited to attend.

ENERGY CONSERVATION

Mr. H. Ota, Non-Ruminant Animal Nutrition Laboratory, reports that heat from refrigeration compressors and from animals under study in Building 255 is used to heat the building. The building is maintained at 55 to 60°F while the offices are kept at 65°F.

Cooperative Activities

Virus Transmission Demonstrated: Cooperative research between the Plant Virology Laboratory and the Department of Plant Pathology, University of Arkansas, has demonstrated the transmission of the satellite of tobacco ringspot virus by Xiphinema americanum.

New Tumor Inhibitor Found: The Cancer Screening Program in which Medicinal Plant Resources Laboratory cooperates with the National Cancer Institute has identified a potent new tumor inhibitor in a Mexican plant. A crystalline compound, as yet uncharacterized, has shown significant activity against an animal test system designed to select chemical agents that will be effective against the drug-resistant, slow-growing cancers in man. Activity against this system assures clinical evaluation of this compound. This is the tenth drug identified by 13 years of screening to be selected for clinical evaluation.

Cooperative Activities Con't.

Components of Virus Presented: Based upon cooperation between the Plant Virology Laboratory and the Fruit Laboratory, a paper identifying and characterizing nucleic acid-containing components of tomato ringspot virus was presented at the Second International Congress of Plant Pathology and will appear in the journal VIROLOGY.

Completion of Fulbright Appointment: On January 9 Dr. Gunay Saner completed her appointment as a Senior Fulbright Fellow with the Nutrition Institute after 6 1/2 months of a very productive association. Dr. Saner, a pediatrician at the University of Istanbul, Turkey, has for years been involved in studies demonstrating the existence of chromium deficiency in malnourished children of the Istanbul area. She came to Beltsville to obtain a thorough knowledge of the modern methods of chromium analysis, and of problems of trace element nutrition in general. Not only did she acquire this knowledge but she offered us the opportunity through close collaboration with the Chairman of her Department to analyze and understand the important changes of chromium metabolism during the first years of life. Upon her return to Turkey, Dr. Saner will initiate a survey of chromium nutrition (and of other trace elements) in the population. The results will be important not only for her country but for us, as well: an example of an undertaking of great mutual benefit.

Electron Micrographs Prepared: Cooperative research between the Plant Virology Laboratory and the Swiss Federal Institute of Technology in Zurich has resulted in electron micrographs of two very small ribonucleic acids: potato spindle tuber viroid and RNA of the tobacco ringspot virus satellite. The results are to appear in VIROLOGY.

Studies on Amino Acid Acceptor Properties Initiated: Cooperative research between the Plant Virology Laboratory and the Institut de Botanique, University Louis Pasteur, Strasbourg, France, has been initiated in efforts to determine whether the potato spindle tuber viroid possesses amino acid acceptor properties similar to certain plant virus RNA and with the Department of Biology, University of California, Los Angeles, in efforts to determine the nucleotide sequence of the potato spindle tuber viroid.

Further Adventures of the Astro-moths: According to a television film beamed down from the Skylab, the gypsy moth experiment is proceeding well. Approximately 12 moths have broken their normal hibernation period and emerged early. After splashdown, on February 7, further observations and tests will be made to determine if a real breakthrough toward gypsy moth control has been achieved.

Putting Research to Work

New Blueberry Cultivar: Dr. D. H. Scott, Fruit Laboratory, announces the introduction of a new blueberry cultivar, named ELLIOTT. ELLIOTT is the latest ripening of all blueberry cultivars and extends the fruiting season about 7 to 10 days. One of its chief characteristics is that it harvests

very well mechanically. This cross was made at Beltsville and seedlings were grown by Mr. Arthur Elliott, a private grower, at Otter Lake, Michigan. Mr. Elliott selected the seedling that has now been named for him in recognition for his more than 25 years of cooperation with ARS at Beltsville.

Visitors From:

United Kingdom: Mr. John Hanford, General Manager of Alta Lipids UK Ltd., visited T. R. Wrenn and Joel Bitman of the Biochemistry Laboratory on January 18. Dr. Hanford is setting up a plant in England to make protected feed supplements to produce polyunsaturated milk and meat.

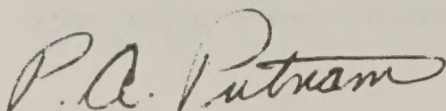
Poland: Mr. Jerzy Rasinski, Agricultural Attache of the Embassy of Poland, accompanied Pesticide Specialists Drs. Teodor Juskiewicz and K. Glogowski on their visit to Beltsville January 22. They had very interesting visits with Dr. A. W. Taylor, Acting Chairman of the Agricultural Environmental Quality Institute, and Laboratory Chiefs Beroza, Hill, Jacobson, Kearney, Redfern and Schechter. Messrs. Sullivan, Morgan and Retzer gave demonstrations of new fly and mosquito control and aircraft disinsection techniques.

Sweden: Dr. Janer, Agricultural Attache, Embassy of Sweden, brought four of his countrymen to BARC. They met with Mr. Ivan Lindahl, Drs. James Bond, Henry Menge, and Norman Steele of the Nutrition Institute and Drs. Cam Calvert and Lewis Smith of the Biological Waste Management Laboratory.

Sweden: Jan J. Cederstrom, Scanbis, Aktiebolag, Stockholm, Sweden, visited Dr. Neal O. Morgan, Chemical & Biophysical Control Laboratory; Mr. Martin Jacobson, Biologically Active Natural Products Laboratory; and Mr. Lowell E. Campbell, Physical Control Laboratory. Mr. Cederstrom discussed non-chemical methods for controlling insects, especially the use of electrocutor grids plus UV lamps and pheromones as attractants.

Japan: Dr. Hajimy Komada, Vegetable and Ornamental Crops Research Station, Ogoso Tsu-City, Japan, visited the Soilborne Diseases Laboratory on January 8-10 to discuss survival and control of soilborne plant pathogens. Dr. Komada also presented a seminar on survival of Fusarium species that cause plant wilts.

American Museum of Natural History: Ms. Helen Hays of the American Museum of Natural History, New York City, recently visited Helene Cecil and Joel Bitman of the Biochemistry Laboratory. Ms. Hays has been doing research on Common Terns on Great Gull Island in Long Island Sound. Dr. Cecil will be conducting studies on some thin-shelled eggs collected there over the last two years.



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NOTES FROM THE DIRECTOR

No. 28

February 21, 1974

Employee Activities

Television Tappings - Dr. Raymond Scharr and Dr. Irvine L. Peterson, Animal Improvement Programs Laboratory, recently taped two "Down to Earth" TV programs concerning the work of the National Poultry Improvement Plan. They were aired locally the first part of January and are now on loan to other stations across the country. Radio tapes on the same subject were also made and distributed.

Service on International Committee - Dr. Curtis W. Sabrosky, Systematic Entomology Laboratory, has been invited to serve on the Editorial Committee of the International Commission on Zoological Nomenclature to prepare a new edition of the International Code of Zoological Nomenclature and of the Constitution of the Commission. The Code guides all zoologists in the proper application of scientific names to animals.

American Genetics Association Election - At the annual meeting of the American Genetics Association held in Washington, D.C. on February 9, Dr. Herbert O. Hetzer, recently retired from the Animal Physiology & Genetics Institute, was elected President; Dr. Patricia Sarvella of the Plant Genetics & Germplasm Institute was elected Vice President; Dr. Robert H. Miller, Animal Physiology & Genetics Institute, was elected Secretary; and Dr. Toru Arisumi, Plant Genetics and Germplasm Institute, was elected Treasurer.

VPI Visiting Scholar - Dr. Robert Oltjen, Ruminant Nutrition Laboratory, recently spent two days on the Virginia Polytechnic Institute campus as an invited visiting scholar. During his two day visit, Dr. Oltjen presented two seminars entitled "Non-Protein-Nitrogen Utilization by Ruminants" and "Increasing Polyunsaturated Fatty Acids in Ruminant Fats and Human Health." The remaining time was spent in discussions with faculty and graduate students in the Animal Science, Dairy Science, and Veterinary Science Departments and also with administrators of the University.

Community Relations - On January 16, Dr. David A. Vaughan, Protein Nutrition Laboratory, talked to science students at Wheaton High School. He discussed careers in Nutrition and gave an example of the practical value of small animal experiments. This talk was part of Wheaton High School's Career Presentation Series.

Invited Papers

Swine Testing - Dr. Ben Bereskin, Genetics and Management Laboratory, presented an invited paper entitled "Considerations in Swine Testing in the U.S." at the Extension Section Meeting of the Southern Section of the American Society of Animal Science, February 5, at Memphis, Tennessee.

Breeding Program - Dr. Frank N. Dickinson, Chief of the Animal Improvement Programs Laboratory, was invited to speak at the annual Colorado Dairy Days Program in Greeley, Colorado, January 23. His topic was "Operations of a Practical Breeding Program to Genetically Improve Economically Important Traits in a Dairy Cow Herd." While in Colorado, he was also guest lecturer to the Animal Breeding class and the Animal Science Department Faculty Seminar at Colorado State University, Fort Collins.

Insect Control - Dr. William W. Cantelo of the Vegetable Laboratory presented an invited lecture on January 29 to students and faculty of the University of Delaware, Department of Entomology and Applied Ecology. The subject of the lecture was "Physical Control of Insects, Modern Techniques, and Future Prospectus."

Honors and Awards

Outstanding Performance Award - George M. Malakatis, Biological Laboratory Technician of the Animal Parasitology Institute, recently received a quality within-grade increase for his outstanding performance in furthering the objectives on the in vitro cultivation and maintenance of parasitic nematodes of cattle and sheep.

Book Dedication - Dr. Carlos H. W. Flechtmann, a world authority on the biology, systematics, and control of mites in South America, dedicated his recent book, "Acarine Mites of Agricultural Importance," to Systematic Entomology Laboratory's Dr. Edward W. Baker, as follows: "To Doctor Edward W. Baker, who directed my interest to the study of plant acarine mites and who showed me, in the words of Thoreau, that: 'Frontiers are not in the east or west, or in the north or south, but wherever man is confronted with a matter.'"

Maryland Society President Chosen - Dr. Ronald W. Hodges, Location Leader for that part of the Systematic Entomology Laboratory located at the Smithsonian Institution, has been elected President of the Maryland Entomological Society, to serve from 1973 to 1975. He has also been elected First Vice President of the Lepidopterist's Society, a national organization of amateur and professional students of butterflies and moths. Dr. Hodges currently serves on the Editorial Board of Miscellaneous Publications of the Entomological Society of America.

Cooperative Activities

Identification of Insects - Dr. R. M. Bohart, University of California at Davis, known widely for his research on the systematics and biology of wasps, worked for one month in Washington with Dr. Arnold A. Menke of the Systematic Entomology Laboratory. Dr. Bohart identified large numbers of miscellaneous wasps in the National Collection of Insects, thereby advancing his own taxonomic studies and at the same time providing accurately identified material for use by Dr. Menke in his identification activities.

Biological Control of Insects - Dr. Lloyd Knutson, Chairman, Insect Identification and Beneficial Insect Introduction Institute, attended the annual Mid-Atlantic Soybean Growers' Conference at the Wye Institute on January 30. At the meeting, Dr. A. Steinhauer of the University of Maryland reported on the successful introduction of a parasitic wasp for the biological control of the Mexican Bean Beetle, the major insect pest of soybeans in the region. This project is supported by the Beneficial Insect Introduction Laboratory.

Maryland Egg Packing Plant Study Completed - Jesse W. Goble, Dairy and Poultry Products Marketing Laboratory, has completed a research study for a Maryland shell egg packing firm in which layouts and operating methods were developed for a new shell egg packing plant with an output of 80 cases of eggs per hour. The study was made in cooperation with Otto Niederer Sons, Inc., a manufacturer of shell egg grading and packing equipment.

New Strawberry Variety - Darrow, a new strawberry variety, has been introduced in cooperation with the Maryland Agricultural Experiment Station. Darrow is the earliest ripening, red stele resistant variety originated to date. Red stele is a destructive root rot that can be controlled only by use of resistant varieties. The fruit of Darrow is very firm and handles well in pick-your-own and standard commercial methods of harvesting the berries. Darrow is named in honor of Dr. George M. Darrow, world famous former head of small fruit investigations of the USDA who is renowned for his work on improvement of the strawberry.

APHIS Entomologists Assisted - PPQ Inspectors F. H. Walkup and E. B. Bauman of APHIS were recently assigned the task of traveling throughout Italy to assess the role that insects play in the shipping of Italian pears to the U.S. Five taxonomists of the Systematic Entomology Laboratory spent two days instructing Inspectors Walkup and Bauman in the recognition of important Italian pear pests to aid their field studies in Italy.

Thesis Examiner - Louise M. Russell, Systematic Entomology Laboratory, recently served as external examiner for a Ph.D thesis candidate at McDonald College of McGill University, Quebec. The thesis was a revision of the North American species of the genus Craspedolepta Enderlein (Psyllidae), and was based on computer analyses of one group of species, and on phenetic and phyletic studies of all species. Computer analyses and detailed phenetic studies have not appeared previously in psyllid literature.

Putting Research to Work

Common Names of Insects - Dr. D. M. Anderson of the Systematic Entomology Laboratory has been named Chairman of the Committee on Common Names of Insects of the Entomological Society of America. By virtue of his wide experience in insect nomenclature, Dr. Anderson will lead the Society's long-term effort to establish meaningful common names for many of our most important agricultural pests, and to stabilize their Latin names.

Solar Energy - How can it be applied in Agriculture to help alleviate current energy shortages? On January 23 and 24 at the Washington Hilton Hotel, representatives from industry, Congress, and federal agencies met to discuss

the role of solar energy in meeting present and future energy needs. Dr. Gerald E. Carlson of the Light and Plant Growth Laboratory represented BARC at this conference. Congressional representatives discussed the many bills which are pending before the House and Senate for developing national policy and research and development of energy. Senator Morse emphasized that many are interested in solar energy because it is available in large quantities, it is readily available to everyone, and it is non-polluting. Possible agricultural applications of solar energy are in heating and cooling of greenhouses, grain drying, heating and cooling of animal shelters, low temperature storage of fruits and vegetables, and others. *Mass

Visitors From:

Hungary - Dr. Bela Barna, University of Horticulture, Budapest, Hungary, visited members of the Vegetable Laboratory recently to discuss vegetable breeding systems and new evaluation techniques for resistance to pests and new sources of pest resistance.

Sweden - A group of dairy farmers from Sweden spent an afternoon touring projects at the dairy facilities.

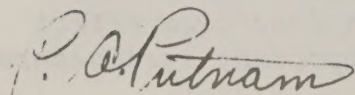
Egypt - Mr. I. Boulòs, General Director of Agricultural Research Stations, for Egypt, spent four days visiting members of NPS and BARC to discuss cooperative research under PL 480 grants.

Burma - Mr. Kyaw-Aye, from Burma, tape recorded talks with Mr. Merrill Timmins, Cooperative Farm Building Plan Exchange and Rural Housing, and Dr. James Smith, APGI, for later use by Voice of America in his country.

Egypt - Dr. A. M. El Zarka, Institute of Plant Pathology, Giza, Egypt, visited Dr. R. G. Orellana of the Applied Plant Pathology Laboratory to discuss a PL 480 project on sunflower diseases.

Afghanistan - Mr. Charles A. Duncan, Vegetable Specialist, AID, Kabul, Afghanistan, conferred with Dr. Webb, Chief, Vegetable Laboratory, February 11 on progress in development of acceptable potato varieties for Afghanistan which is being pursued through the cooperative efforts of ARS, BARC, and AID.

National Institute for Research in Dairying - Dr. C. C. Thiel of the National Institute for Research in Dairying visited Dr. P. D. Thompson and Dr. W. D. Schultze of the Genetics and Management Laboratory during February 19-21. During his visit Dr. Thiel discussed his research on the relationship between milking machines and mastitis infection in dairy cows. He also delivered a seminar during his visit.



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NOTES FROM THE DIRECTOR

No. 29

March 21, 1974

Employee Activities

Television Attraction - Gerald E. Carlson, Chief of the Light and Plant Growth Laboratory, appeared on "Across the Fence" March 2, describing the work of the Laboratory. While at the WRC-TV studio, he presented a lettuce plant to Willard Scott, weatherman and erstwhile Ronald McDonald. Willard demonstrated his gratitude by munching the lettuce on the 11:00 P.M. news, while giving Light & Plant Growth Lab and USDA a large plug. Richard H. Hart and Herschel H. Klueter, agronomist and engineer respectively, with Light & Plant Growth Laboratory, appeared on "Down to Earth" February 23 and 24. They described their research into the effects of ultraviolet radiation and high-intensity discharge lamps on plant growth. Klueter has really made the big time; his research will be featured in the forthcoming issue of My Weekly Reader.

Rapid Card Agglutination Test Training - A training course in the rapid card agglutination test for bovine anaplasmosis was held on February 7 at the Animal Parasitology Institute. Technicians from Federal-State animal disease laboratories received training in the performance, interpretation, and application of the test in the control of anaplasmosis. The test is now available for diagnostic use to certified laboratories. Mr. T. E. Amerault, Microbiologist, Haemoprotozoan Diseases Laboratory, has presented research findings on the accuracy and development of the card test to diagnosticians in five APHIS regional workshops on bovine anaplasmosis recently. On February 18 he reported his findings concerning the test to the Virginia State Veterinary Medical Association Annual Meeting at Charlottesville, Virginia. (See earlier report Letter 25, November 29, 1973)

Our Loss; Their Gain - Dr. C. H. Hanson, Chief, Applied Plant Genetics Laboratory, Plant Genetics & Germplasm Institute, transferred on March 4 to the National Program Staff as Staff Specialist for Forage and Range. He was an effective leader of the Laboratory and we will miss him in the Plant Genetics & Germplasm Institute. We are sure he will continue to effectively serve ARS in his new assignment.

Anti-Cancer Plant Samples - Dr. Arthur S. Barclay, Botanist for the Medicinal Plant Resources Laboratory, returned to Colombia in mid-January to procure large samples of plants that have shown anti-cancer activity. This is the first stage in following up leads developed from screening samples collected by Dr. Barclay during an eight-month field program in Colombia in 1972. Dr. Barclay will also collect samples of plants representing selected families that are believed to be rich sources of potentially useful anti-cancer agents.

BARC SCIENCE SEMINAR

Dr. James E. Darnell, Chairman of the Department of Biological Sciences at Columbia University, New York City, presented the February lecture in the Beltsville Science Seminar Series. Dr. Darnell's topic was "Messenger RNA Biosynthesis in Mammalian Cells." Biosynthesis and control of biosynthesis of messenger RNA (m-RNA) in eukaryotes is different from that in prokaryotic cells. Heterogeneous nuclear RNA (HnRNA) is the first product of DNA transcription, enroute to mRNA, and it is HnRNA which is further processed to produce mRNA. Part of the processing of HnRNA involves the attachment of a polyadenylic (Poly A) tail, followed by cleavage to smaller units. Dr. Darnell suggested that the multiple sequences found in HmRNA, some of which occur as "hairpin" double strands, may serve as regulating sites for protein molecules which presumably determine whether or not a given mRNA is produced. About 150 persons attended the seminar.

The March lecture in this series will be presented by Dr. Robert W. Holley of the Salk Institute in San Diego, California. Dr. Holley's topic is "Control of Growth in Mammalian Cells." This should be an extremely interesting lecture. We hope everyone will attend, if only to glimpse a Nobel Laureate who was formerly a member of ARS.

Invited Papers

Promoting Agriculture - Dr. Wilson Smith of the Horticultural Crops Marketing Laboratory represented the USDA as a guest lecturer at the Agriculture and Natural Resources Science Class at Delaware State College on February 21. He spoke on his current research and on research opportunities in agriculture.

Insect Sex Pheromones - Dr. J. David Warthen, Jr., Biologically Active Natural Products Laboratory, presented an invited lecture on "Insect Sex Pheromones" at the March 7 meeting of the Entomological Society of Washington in the National Museum, Washington, D. C.

Swine Reproduction - Dr. Lawrence Johnson, Reproduction Laboratory, presented an invited lecture on February 14 to the students and faculty of the Department of Animal Science, Purdue University. The subject of the lecture was "Biochemical and Morphological Changes in Boar Spermatozoa During Freezing."

Swine A.I. - Dr. Vernon Pursel, Reproduction Laboratory was invited to speak to the Michigan Swine Producers at their Workshop on Reproduction in East Lansing, Michigan, February 27. His topic was "Recent Developments in the Freezing of Swine Semen." While in Michigan, he also presented a seminar to students and faculty of the Department of Animal Science, Michigan State University.

Honors and Awards

Merit Certificate Award - On February 28, Dr. C. H. Hanson was awarded the Merit Certificate for Outstanding Service to Grassland Agriculture by the National Grassland Council in Shreveport, Louisiana. He was cited for his

contributions to alfalfa improvement, with special reference to studies showing that simple recurrent phenotypic selection was a very effective procedure for developing multiple resistance to diseases and insect pests in alfalfa.

Cooperative Activities

New Air Suspension System - The ARS experimental refrigerated van container has been equipped with a new air-ride suspension system to help reduce shipping damage caused by shock and vibration. The new suspension system was furnished for the research by the Neway Division of Lear-Siegler, Inc., and installed by the Trailmobile Division of Pullman, Inc., without cost to ARS. The new equipment will be evaluated in shipping tests with fragile products in cooperation with shippers, truckers, railroads, and other groups.

New Orleans Wholesale Food Distribution Facilities Study Results - On February 1, Earl G. Taylor and Kenneth H. Brasfield, assisted by Richard K. Overheim, presented highlights of a study designed to improve the New Orleans wholesale food distribution facilities to local officials in New Orleans. This study, conducted by the Food Distribution Research Laboratory, proposes a plan for the development of a new regional wholesale food distribution center. It calls for the development of \$13.4 million worth of facilities to meet the immediate needs of 54 local food wholesalers. Ultimately, the center could be expanded to more than twice its initial size. The study was made at the request of the French Market Corporation and the city of New Orleans. Television coverage was provided on local news programs.

Putting Research to Work

New System Developed for Shipping Freight - The Transportation and Packaging Research Laboratory has developed a new system whereby perishable foods that require moderately low temperatures during overseas transport can be safely shipped. The system uses dry freight van containers ventilated with a new cooling system using outside sea air to cool the cargo. Substantial savings are possible using the new system which is lighter but carries 10% more perishable cargo. Perishables are currently shipped in more costly refrigerated containers which are presently in extremely short supply. Grapefruit and watermelons have been successfully shipped from Florida to European markets using the new system.

1974 Yearbook of United Fresh Fruit & Vegetable Association - The 1974 yearbook of the United Fresh Fruit and Vegetable Association, a highly attractive annual publication of this national trade association, carries several articles by members of the Agricultural Marketing Research Institute, and references to its research program including: Reducing export spoilage losses on overseas shipments of lettuce by C. J. Nicholas of Transportation & Packaging; Extending the fresh storage and shelf life of packaged rhubarb, green onions, and kale by Howard Hruschka of the Horticultural Crops Research Lab; and Citrus shipping costs by Joseph P. Anthony, Jr., and Robert C. Mongelli of the Market Operations Research Lab. References were made to Research on adapting shipping containers to palletization by Donald R. Stokes of Transportation & Packaging; Research to develop better loading patterns for overseas shipments of radishes by the Transportation & Packaging Laboratory; and photographs from ARS research on transportation and packaging of floral products were included.

ENERGY CONSERVATION

You may have recently noticed electric carts being tried out near the greenhouses at ARC-West or the Dairy complex at BARC-East. These carts which will not count as vehicles are being evaluated for short-haul transportation of people and research material.

Visitors from:

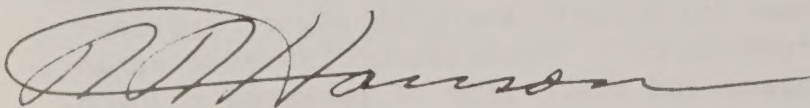
Colombia - Dr. Uriel Ariza, Superintendent, Research Laboratory of Veterinary Medicine, Bogota, Colombia, visited the Animal Parasitology Institute, February 21, to discuss the organization, administration, and research program of that Institute.

Japan - Dr. Y. Hanami, Technical Manager, Environmental Control Division, Koito Industries, Ltd., Tokyo, Japan, visited with scientists at the BARC on January 25. Laboratories visited included Plant Stress, Light & Plant Growth, Air Pollution, and Physical Control. Dr. Donald Krizek, Plant Physiology Institute, served as coordinator for the visit.

Spain - Drs. Ricardo Perez Villota, Janer Gros, and Rafael Salazar of Spain visited the Vegetable Laboratory February 27 to review the vegetable research program.

Pakistan - Mr. Nasrullah Chatha, International Atomic Energy Agency Fellow from the Nuclear Institute for Agriculture and Biology, Lyallpur, Pakistan, visited members of the Biologically Active Natural Products, Insect Chemosterilants, Biological Evaluation of Chemicals, and Insect Physiology Laboratories. Before visiting Beltsville, Mr. Chatha spent one year on the sterile fruit fly release program at the Hawaiian Fruit Flies Laboratory Honolulu, Hawaii.

Brazil - A 9-member Brazilian Marketing Team met with scientists from 6 labs in AMRI one day last month to discuss our research relating to the quality maintenance, handling, packaging, transportation and distribution of fresh fruits, vegetables, and eggs. The team is participating in a 6-week training program that is focusing on problems related to the implementation of a grades and standards program including the complementing of supportive research and distribution areas. The laboratories involved were Horticultural Crops, Post-Harvest Physiology, Instrumentation, Dairy and Poultry, Food Distribution, and Transportation and Packaging.



A. A. Hanson
Director

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NOTES FROM THE DIRECTOR

No. 30

April 18, 1974

Employee Activities

How Packaging Benefits Consumers was the topic discussed by Don Stokes, Transportation & Packaging Research Laboratory, on "Across the Fence" scheduled for showing over WRC-TV March 30-31. Mr. Stokes mentioned the many benefits to consumers which include: (1) reducing transportation and refrigeration costs by removal of the inedible parts of produce such as lettuce wrapper leaves and carrot tops; (2) reducing shipping container costs and packing labor by jumble-packing fruits in corrugated boxes instead of face-packing them in wood boxes; (3) preventing loss of moisture and vitamins; (4) protecting products from bruising; and (5) reducing retail labor costs. He also stressed the need for more package standardization to make the world's most efficient marketing system even more so.

A Beltsville "first" may have been the mode of transportation to Atlantic City by scientists of the Nutrition Institute to present 21 research papers and one symposium presentation at the meeting of the Federation of American Societies for Experimental Biology, held April 8-12. The chartered bus, provided not only a comfortable ride, but also resulted in considerable savings. The O. E. Atwater Symposium, commemorating the 80th Anniversary of Human Nutrition Research in the USDA, was a part of the program within the American Institute of Nutrition. The ARS Atwater exhibit presented important memorabilia of Atwater's pioneering research, as well as some modern developments.

Invited Papers

Muscle Collagen - Dr. Philip E. McClain, Protein Nutrition Laboratory, presented an invited lecture on April 2 to the students and faculty at Michigan State University. The lecture, entitled "Muscle Collagen: Isolation and Characterization" was a part of the Muscle Biology Seminar Series sponsored by the Department of Food Science and Human Nutrition.

Sex Control Research - Dr. Charles A. Kiddy, Reproduction Laboratory, was invited to speak at the Annual Convention of the American Simmental Association in Louisville, Kentucky, on February 1. His topic was "Sex Control Research." The presentation attracted a great deal of attention since there are schemes being promoted to predetermine the sex of calves. Dr. Kiddy set the record straight with regard to progress that has been made and pointed out that no satisfactory method of predetermining the sex of animals has yet been developed. The talk will be published in the "Simmental Shield," national organ of the American Simmental Association. Two other periodicals have also asked Dr. Kiddy to write on this subject.

Insecticidal Aerosol - Mr. William Sullivan, Chemical & Biophysical Control Laboratory, was invited by the Chemical Specialties Manufacturers Association to present a special invited talk on the History of the Insecticidal Aerosol as part of a symposium on "The Aerosol Industry Yesterday, Today, and Tomorrow" in Chicago at the CSMA meeting on May 13.

SCIENCE SEMINAR

Dr. Robert W. Holley, Nobel Laureate, American Cancer Society Professor of Molecular Biology at the Salk Institute in San Diego, California, and ex-ARS scientist, presented the March Science Seminar lecture on March 27. Dr. Holley's topic was "Control of Growth in Mammalian Cells." Dr. Holley concluded that a healthy cell remains healthy by virtue of what it can exclude, and this is probably dependent on its membrane. The lecture was well attended by about 250 participants.

The next Beltsville Science Seminar will be presented by Dr. Christian Anfinsen, Nobel Laureate of the National Institute of Health, on April 24 in the Beltsville Main Auditorium. Dr. Anfinsen will lecture on "Protein Structure and Function." All are invited.

Cooperative Activities

First successful sterilization of mammalian sperm in vitro has resulted from cooperation between the Insect Chemosterilant Laboratory and the Reproduction Laboratory. V. G. Pursel, L. A. Johnson, and A. B. Borkovec treated boar semen with the insect chemosterilant tepa and demonstrated by artificial insemination of swine that the sperm was motile, competitive with normal sperm, and capable of fertilization, but that the zygote died in early embryogenesis. These results have considerable theoretical and practical significance. Interaction between the sterilant and a sperm cell can now be studied directly; practical utilization may lead to a new simplified technique for determining reproductive capacity of boars and other animals and for selecting best semen for artificial insemination.

ARS Scientists Accompany Shipments to Europe - William R. Black of the Transportation & Packaging Research Laboratory and Thomas Moffitt of the Orlando, Florida, Horticultural Crops Research Laboratory of ARS recently accompanied 10 refrigerator van container loads of various fruits and vegetables aboard one of the largest containerships in the world from New York to Europe. The ARS scientists are monitoring the environmental conditions of the cargo in the 35'x8x8.5' van containers. This is one phase of ARS research to help U.S. shippers and transport firms improve the efficiency and reduce the cost of exporting U.S. perishable foods to overseas markets.

Whey Utilization in Animal Feeds Without Drying - The recent publication of the procedure developed by R. E. Hargrove and F. E. McDonough, Dairy Foods Nutrition Laboratory, for converting a waste whey fraction into animal feed

has generated numerous domestic and foreign requests for additional information. The Hargrove-McDonough process takes the lactose-salts fraction from the ultra-filtration of whey, concentrates it, fortifies it with various nitrogen sources, and crystallizes it into blocks. The new process utilizes completely a product containing over 80% of the BOD of the original whey and thus eliminates a waste disposal problem as well as the need for a large drying operation. Cooperative studies with G. P. Lynch, Ruminant Nutrition Laboratory, have proved the nutritional value and animal acceptability of the product for ruminants. In addition, cooperative studies are underway with the Protein Nutrition Laboratory on the protein efficiency ratio of the protein fraction, and with the Bioenvironmental Bee Laboratory on the use of this fraction in feeding bees.

Cataloging the World Literature on Insect Taxonomy - The second biennial meeting of 18 insect taxonomy research leaders from Canada Agriculture, Smithsonian Institution, U. S. Army, and USDA was chaired by Dr. L. Knutson and Dr. R. H. Foote, Systematic Entomology Laboratory, at the Smithsonian Institution on March 26-27. Research programs and joint interests were reviewed. The discussions resulted in more effective coordination in research and identification of North American insects.

Cooperative insect study - Dr. Ashley B. Gurney, Systematic Entomology Laboratory, Washington, D.C., spent January 20 to March 6 in the Republic of South Africa, participating in a cooperative study of the Decticinae, relatives of grasshoppers which include the American "Mormon cricket" and other insects of concern to U.S. agriculture. The investigation, consisting primarily of field surveys, but also including visits to South African museums, centered about a study of the world genera of Decticinae under way by Dr. David C. Rentz, Academy of Natural Sciences, Philadelphia, Pa.

Putting Research to Work

European Mite Identified from New Zealand - A mite reputed to be a parasite of honeybees was determined by Dr. E. W. Baker, Systematic Entomology Laboratory, for the New Zealand Department of Agriculture. This is the first record of this mite from outside its native home in Europe.

Viroid Article Chosen for "Year Book of Cancer" - A paper resulting from collaborative work between the Plant Virology Laboratory and the High Resolution Electron Microscopy Laboratory of the Swiss Federal Institute of Technology in Zurich, Switzerland, ("Potato spindle tuber viroid. X. Visualization and size determination by electron microscopy," by J. M. Sogo, T. Koller, and T. O. Diener, *Virology* 55:70-80, 1973) has been chosen by the editors of the Year Book of Cancer as one of the most significant articles on cancer published in 1973 and will be reprinted in the forthcoming edition of the Year Book.

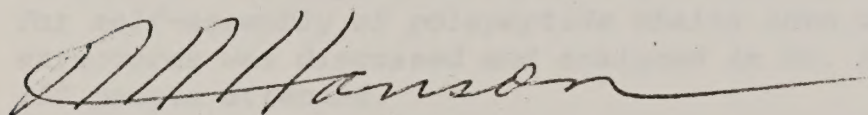
Visitors From:

Japan: Mr. H. Ota, Nutrition Institute discussed windowless broiler housing problems with three Japanese visitors on April 1-2. Before visiting Beltsville, H. Masegi (Taiyo Fishery Co., Ltd.), Y. Aso (ASO Feed Company), and H. Noda (Gifu Broiler Coop) spent two weeks in other states studying broiler production and processing.

Europe - Mr. Claude Naud, General Manager, Interfrigo, a European company owned by all the Government-owned railroads in Western Europe which operates railroad refrigerator cars and van containers throughout most of Europe, Turkey, Israel, and North Africa visited Beltsville recently. Mr. Naud discussed refrigeration and ventilation systems research with Phil Breakiron and Bob Guilfooy of the Transportation & Packaging Research Laboratory in addition to meeting with Dr. H. S. Ricker, Acting Chairman of the Agricultural Marketing Research Institute, and Dr. A. A. Hanson, Center Director.

Argentina - Dr. Raoul Buide and Dr. Luiz Schmied of the University of Buenos Aires, Argentina, visited the Animal Parasitology Institute on April 8 and spent some time with personnel of the Equine Piroplasmiasis Project to learn about recent advances in serologic diagnosis of equine piroplasmiasis.

Sweden - On March 6, a group of 40 Swedish berry growers visited with staff members of the Fruit Laboratory to discuss berry growing. All were commercial growers. This was the third visit to Beltsville in the past 12 years for Mr. Johanssen of the Swedish Agricultural Advisory Service who served as group leader and interpreter. He declared that every fruit grower in Sweden should plan to visit BARC.



A. A. Hanson
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NOTES FROM THE DIRECTOR

No. 31

May 2, 1974

Employee Activities

Spring Insect Pests: Dr. William W. Cantelo, Vegetable Laboratory, appeared on the TV program "Across the Fence." He showed and discussed insects that will be causing problems for vegetable gardeners this spring.

K-H. Federal Women's Program: Dr. Dora K. Hayes, Chemical & Biophysical Control Laboratory, has been named by our Administrator as the new ARS Coordinator of the Federal Women's Program. In this capacity, she will serve as a member of the Equal Employment Opportunity Advisory Committee and advise the Administrator on increasing opportunities for women in ARS.

Invited Paper

"Controlled Environments for Prescription Growing" was the title of an invited paper given by Dr. Donald T. Krizek, Plant Stress Laboratory, at the meeting of the National Capital Orchid Society on April 15.

BARC SCIENCE SEMINAR

Dr. Christian B. Anfinsen, Nobel Laureate, of the National Institutes of Health in Bethesda, was the Science Seminar Lecturer on April 24 at BARC. Dr. Anfinsen's topic was "Protein Structure and Function". The rationale for self-assembly of polypeptide chains into unique protein 3-dimensional structures was discussed and analyzed in Dr. Anfinsen's lecture. About 250 people attended.

The next Science Seminar lecture will be presented by Dr. Jack Dainty of the University of Toronto, on May 15, 1974, at 2:30 p.m. in the BARC auditorium. Dr. Dainty's topic will be "Fundamental Problems of Plant Membrane Transport". All are invited to attend.

Peer Review of New CRIS Work Units

The new system for peer review of research projects has been implemented. Along with the regular CRIS forms (AD-416, AD-417, and AD-418), a supplementary statement expanding the section on "Objectives and Approach" is to be submitted with new proposals. These supplementary statements are then reviewed by a group of the scientist's peers from both ARS and non-ARS locations.

BARC Energy Savings

At a recent Director's Staff meeting, Mr. Milano thanked everyone for effectively dealing with the energy saving effort. We had to meet a 7% reduction quota. We not only made the 7% reduction in electricity and fuel usage, we attained a 9.14% reduction. Cooperation in lowering

thermostats and turning off lights helped to make this possible. This summer, we should stress keeping thermostats up to a minimum temperature of 80-82°, according to the standards, because there is still an energy crisis. These figures are in slight variance with those mentioned in the memorandum to all employees from Joseph R. Wright recommending setting thermostats in the range of 78 to 80°F. Window air-conditioners should be set at low cool. Hopefully we can do as well during the summer season.

I wish to add my personal thanks to each and every employee at BARC for making these savings possible.

Changes in the Director's Office: Mr. C. S. Britt, now officed at the Visitor Center, continues to serve as contact person for BARC and as Soil Conservation Service Liaison. Mr. D. Morgan, Head of the Visitor Staff, now reports to Mr. Britt.

Mr. M. C. Carter (now in Bldg. 003, Rm. 230) is implementing peer reviews of CRIS proposals, developing special commodity packets, summarizing extramural proposals and compiling the News Notes.

Cooperative Activities

Enhanced UV-B radiation work reviewed: Dr. Donald T. Krizek, Plant Stress Laboratory, recently reviewed contractual work on enhanced UV-B radiation being conducted at the University of Florida. This work is supported by the Department of Transportation and coordinated by Dr. Harry R. Carns, Chairman, Plant Physiology Institute.

Putting Research to Work

New Process Developed for Pollution Control: Clarence E. Harris and Dr. W. A. Moats, Dairy and Poultry Products Marketing Laboratory, developed a new process for recovering about 85% of the B.O.D. load in the waste water discharged from egg products plants and shell egg plants. The egg solids recovered from the waste water has potential value as a high protein livestock feed. A public patent has been applied for and the Environmental Protection Agency has voiced an interest in promoting commercial implementation through a grant. Research was conducted on egg plant waste water because a survey conducted by the Poultry and Egg Institute of America indicated that the disposal of waste water, with its high B.O.D. load, was the number one problem facing the industry.

Visitors From:

Russia: A Russian Working Group toured the Beltsville Agricultural Research Center on April 18, conferring with several of our scientists. Mr. Yu. Cherepanov, Deputy Director of the Main Directorate for Agricultural Science and Academic G. S. Muromtsev, Chief, Scientific Secretary of VASKHNIL, visited Plant Physiology Institute and its Laboratories, Plant Stress, Plant Nutrition, Light & Plant Growth, and Plant Hormone and Regulators. They also visited the Soilborne Diseases Laboratory, PPI. Mr. V. D. Gorin, Vice President of VASKHNIL, visited Animal Physiology & Genetics Institute and its Animal Improvement Programs and Genetics and Management Laboratories. They also visited Nutrition's Ruminant Nutrition and Reproduction Laboratories. V. C. Kuntsevich, Main Director for Mechanization and Electrification, Ministry of Agriculture, E. N. Konyushkov, Director, Division of the Scientific Technical Complex, Council of Ministries of the USSR for Science and Technology, and V. G. Kalashnikov, Deputy Director, Division of Presidium of VASKHNIL, visited with the Instrumentation Laboratory, AMRI, Biological Waste Management Laboratory, AEQI, and Light & Plant Growth Laboratory, PPHI.

England: Dr. David T. Clarkson, Principal Scientific Officer, Agricultural Research Council, Letcombe Laboratory, Wantage, Berkshire, England, visited the Plant Stress Laboratory April 16-17, and discussed current research on aluminium toxicity, iron nutrition, and interactions of soil temperature with mineral nutrition of plant species and varieties.

Germany: Dr. Dieter Sauerbeck of the University of Bonn, Bonn, Germany, visited several members of the Agricultural Environmental Quality Institute to discuss plant nutrition, the role of soil organic matter, and the use of isotopes in agriculture.

Chile: Jaime Arrigorriaga and Sargio Rodriguez, agronomists from the Corporacion De Fomento De La Produccion, and Enrique Sandford, Banco Central De Chile, visited Dr. M. Faust, Fruit Laboratory and Drs. Hardenburg and Smith of the Horticultural Crops Marketing Laboratory. These men are in the U.S. to examine Chilean fruit on arrival and visit research stations. The visit was beneficial in that tentative arrangements were made with them for cooperative tests with peaches and Vinifera grapes.

Australia: "Origin of the Australian Insect Fauna" was the subject of a talk presented to the Systematic Entomology Laboratory by Dr. Edgar Riek, Division of Entomology CSIRO, Canberra, Australia, in March at the Museum of Natural History.

Netherlands: Drs. Jan Faber and Alfred Feberwee of the Netherlands Ministry of Agriculture visited the Livestock and Meat Marketing Laboratory in March. Their primary interest in this Laboratory was our research on standards for meat grades. They also had conferences with officials in AMS, APHIS, and FDA.

Israel: Mr. Gideon Cohen, Agricultural Counselor of the Embassy of Israel, Washington, D.C., visited the Vegetable Laboratory recently to obtain experimental potato material for Israel.

Chile: Dr. Jorge P. Silva, Director of Institute of Agriculture, Inia, Stgo, Chile; and Dr. Jacinto Varas, Guayaquil, Ecuador, visited with members of the Vegetable Laboratory, PGGI, to develop an informal exchange of research materials.

Colorado: Dr. Seymore S. Cohen and Miss L. L. Lapi of the University of Colorado Medical Center, Denver, spent three months in the Plant Virology Laboratory, working with Dr. J. M. Kaper on several aspects of turnip yellow mosaic virus.

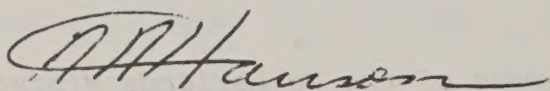
North Dakota: Dr. Darrel Cole, USDA-ARS Agronomist stationed at North Dakota State University, Fargo, visited the Beltsville Agricultural Research Center recently to participate in mutual research activities with Dr. M. N. Christiansen of the Plant Stress Laboratory.

Poland: Jerzy Rasinski, Agricultural Attache, Embassy of Poland, Washington, D. C., visited the Vegetable Laboratory to discuss the potato research program and to request experimental material for research in Poland.

Other Items of Interest

A new energy group has been formed. The Solar Energy Society of America will function as a focus and clearinghouse for information on all aspects of solar energy. The scientists, academicians, technologists, and industrialists who make up the group will consider solar energy in relation to government and legislation, science, industry, agriculture, and private citizens. Charter memberships at \$25 each, which includes subscription to an official journal slated for mid-1974 and a periodic newsletter, are available from the Society at P.O. Box 4264, Torrance, CA 90510.

OPEDA Science Fair - April 24 saw the arrival of the annual OPEDA Science Fair at BARC. The approximately 50 students from Maryland, Virginia, and the District of Columbia, showed their exhibits in the morning, were taken on a tour of the Research Center, and had lunch at the Log Lodge. The principal speaker at the luncheon was Assistant Secretary Robert W. Long.



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NOTES FROM THE DIRECTOR

No. 32

June 13, 1974

In Memoriam - It is with sadness that we report the death of Dr. Harry A. Borthwick on May 21, 1974. He came to the Bureau of Plant Industry in 1936 and retired in 1968 as the Scientist in Charge of the Laboratory for Plant Physiology. Since retirement, he had been a Collaborator with the Ornamentals Laboratory, PGGI. He had a very distinguished career with world-wide recognition of his work on flowering. Dr. Borthwick received many awards and honors; among which was the Distinguished Service Award of the U.S. Department of Agriculture (1959), the Hoblitzelle Award in Agriculture (1963), the Nessim Habif Award, Geneva University, Switzerland (1963), and the Stephen Hales Award of the American Society of Plant Physiologists (1962). He was a member of the National Academy of Sciences and of the American Academy of Arts and Sciences. He will be sorely missed.

Employee Activities

K-H- William A. Bailey, Agricultural Engineer, Transportation and Packaging Research Laboratory, was recently elected Chairman for the 1974-75 season, of the Maryland-Washington, D.C., Section of the American Society of Agricultural Engineers.

PL-480 Review: Dr. R. A. Kilpatrick, Germplasm Resources Laboratory, spent 23 days this spring reviewing PL-480 projects in Pakistan, Yugoslavia, and Poland. Seminars on "The International Rust Nursery Program--Objectives, Problems, and Accomplishments" were presented at Lyallpur and Karachi, Pakistan; Novi Sad and Zabreb, Yugoslavia.

Melwood Horticultural Training Center Luncheon: Two BARC employees, Erle Roberts, Division of Operations, and William Bailey, Transportation and Packaging Research Laboratory, were recognized at the tenth anniversary luncheon sponsored by the Melwood Horticultural Training Center on May 29, 1974. Melwood has graduated approximately 120 young men and women starting with our Mr. Roberts, who has worked on grounds maintenance for 6 years. You will often see him driving the tractor and trailer used to move the lawn mowers around the West Side. Melwood, which has become a model for many school, training, and therapy units nationally and internationally, was originated, organized, and operated initially by a Prince Georges Association of Retarded Children Greenhouse Committee which was led by two Beltsville employees. Mr. Bailey, was the Chairman of the committee and Dr. S. Sheinberg, former employee, was the PGARC Vice President, who coordinated all committee activities.

Invited Papers

Williamsburg Garden Symposium: Harold F. Winters, Germplasm Resources Laboratory, presented an invited lecture on April 4 to the Williamsburg Garden Symposium. The subject of the lecture was "Impatiens--Flower with a

Future." The Garden Symposium is held each year at Colonial Williamsburg under joint sponsorship of Longwood Gardens and the Colonial Williamsburg Foundation.

"Dairy Cattle Genetics Research at Beltsville" was the topic of Dr. R. H. Miller's invited seminar presented to the Dairy Science Department, University of Illinois on April 23, 1974. He also discussed animal genetics research with genetics students at the University.

Honors and Awards

Dr. Cecil H. Wadleigh, Hydrograph Laboratory, was one of eleven distinguished persons who received Honorary Degrees at the 104th Commencement of the University of Massachusetts, Amherst, Massachusetts, June 1. He received an Honorary Doctor of Science degree. Dr. Wadleigh was graduated from the University of Massachusetts in 1930 and received his Ph.D. from Rutgers University in 1935. He was on the faculty of the University of Arkansas before joining USDA at the U.S. Salinity Laboratory, Riverside, California. Subsequently, he transferred to Beltsville to do research on sugar. In 1955, he became Director of the Soil and Water Conservation Research Division when it was created. He was appointed Science Advisor to the Administrator in 1970. Following his retirement from USDA, he became a Collaborator with the Hydrograph Laboratory. In 1973 he was appointed to the National Academy of Sciences. He has authored numerous scientific articles covering a wide spectrum of agricultural and related fields.

Pesticide Degradation Laboratory: At the 28th Annual Honor Awards, U.S. Department of Agriculture, the Pesticide Degradation Laboratory was awarded a Group Award for highly successful team effort in response to an urgent international need for research information on the occurrence and fate of a highly toxic pesticide contaminant and its significance to man and his environment.

Anaplasmosis Research Team: Four scientists from the Animal Parasitology Institute, Mr. Thomas E. Amerault, Dr. Thomas O. Roby, Dr. Joseph E. Rose, and Mr. Richard L. Sealock, and Dr. Edward A. Schilf from APHIS, were presented a Group Award for cooperative research culminating in the development of a rapid, practical, and reliable test for the diagnosis of bovine anaplasmosis.

Dr. George M. Darrow, retired ARS small fruit specialist, was honored at a strawberry field day, May 22, at BARC with Dr. A. A. Hanson presenting Dr. Darrow with a shortcake made with berries of the new 'Darrow' cultivar. Dr. Hanson praised Dr. Darrow for his distinguished career during which he received the Distinguished Service Award and many other honors, and for his continued interest in strawberry improvement. A group of about 70 people met in the strawberry research plots to hear Dr. Hanson's presentation and examine the 'Darrow' cultivar and strawberry selections from the breeding program. The group included several retired former ARS associates of Dr. Darrow, nurserymen and growers who are cooperating in strawberry improvement, and research and extension specialists from North Carolina, Maryland, Pennsylvania, and New Jersey and the staff of the Fruit Laboratory, BARC.

BARC SCIENCE SEMINAR

The final BARC Science Seminar of the 1973-74 season was given by Dr. Jack Dainty, Professor and Chairman of the Botany Department of the University of Toronto. Dr. Dainty's topic was "Fundamental Problems of Plant Membrane Transport." The basic physics of movement of ions and water through plant membranes was discussed and analyzed. Current theories favor the existence of hydrogen ion pumps in the membrane which operate to produce the driving forces which move ions and water through the membrane. Dr. Dainty discussed the evidence for this viewpoint.

Dr. Orville Levander, Nutrition Institute, is the new Chairman of the BARC Science Seminar Committee responsible for the 1974-75 program. Members of the BARC Science Seminar Committee are: T. O. Diener, PPI; M. Paape, APCI; J. Plimmer, AEQI; J. A. Romberger, F.S.; P. A. Sarvella, PGGI; G. W. Schaeffer and L. Owens, PPHI; R. Smiley, IIBIII; K. Steward, NI; J. R. Lichtenfels, API; and M. Lieberman, AMRI. Please communicate your suggestions concerning these seminars to Dr. Levander or to the committee member from your Institute.

Cooperative Activities

Biennial Research Conference: On April 16-18, the Livestock and Meat Marketing Laboratory held its biennial conference for State experiment Station scientists with whom cooperative meat research is being conducted. The purpose of the meeting was to report progress, present plans, exchange information, and discuss mutual problems with the laboratory staff, industry representatives, AMS, APHIS, and other cooperators. During the conference cooperative research reports were presented by scientists from several universities. Summaries of the meat research programs of BARC laboratories were also presented. Highlights of the conference included (a) a discussion by Dr. Senti on funding extramural research; (b) Dr. Putnam's views on the basic principles of realistic resource management; (c) meat merchandising problems - today and tomorrow by Mr. Lou Havrilla of Iowa Beef Packers, Inc.; and (d) meat research problems as viewed by the packer by Dr. Harold Herring, Armour and Company.

Cooperative Potato Marketing Study: Joseph P. Anthony, Jr., Robert C. Mongelli, and Marvin D. Volz, Market Operations Laboratory, are presently conducting a study of tablestock potato marketing systems that has resulted in cooperative studies with Donald E. Hudson, ARS, Orono, Maine, on palletized handling and shipping methods from packingshed to receiving warehouse. Cooperative research on packingshed operations is also being conducted with the New York Department of Agriculture on Long Island and with the California Extension Service in the Bakersfield area. A meeting with officials of the Virginia Department of Agriculture will initiate cooperative research into systems of handling and shipping potatoes from Virginia's Eastern Shore area. These are various phases, occurring simultaneously, of ARS research to help potato shippers, carriers and receivers improve efficiency and reduce costs of physical distribution of tablestock potatoes.

Putting Research to Work

BARC Participation in Scout Camporee: BARC was requested to participate in a program dealing with environmental problems facing our Nation, for the Patuxent District Scout Camporee held in Greenbelt Park, May 17-19. Walt Arminger, Biological Waste Management Laboratory, responded by displaying and discussing his research dealing with the revegetation of acid surface mine spoil in Appalachia.

ARS Mail Management Program

BARC has recently had a problem with Chain Letters. Apparently, some have been handled illegally by use of franked envelopes. According to AM 263.1, . . . The Postage and Fees Paid indicia on envelopes identified official Government mail and the use of this type envelope for personal use under any circumstances is prohibited. . . .

Visitors From:

India: Dr. R. K. Srivastava, an agricultural engineer with Punjab Agricultural University, India, visited H. Ota of the Nutrition Institute on May 2-3 concerning housing for market egg and broiler production. He also visited with Dr. R. G. Yeck (NPS) on waste management and Dr. R. E. Patty (NPS) on other animal production. The visitor was on a Ford Foundation grant to study poultry, swine, and dairy industries in Europe, the United States, and Japan.

United Kingdom: Dr. Michael J. Newport from the National Institute for research in Dairying, Shinfield, Reading, United Kingdom, visited with personnel of the Non-Ruminant Animal Nutrition Laboratory. Dr. Newport has spent the past year on sabbatical leave working in the area of swine nutrition at the University of Guelph, Ontario, Canada.

Poland: Jerzy Rasinski, Agricultural Attache, Embassy of Poland, Washington, D.C., and Mr. and Mrs. John Krasitski of PAN, Poland, visited the Livestock and Meat Marketing Laboratory to discuss (a) the meat research program of the laboratory, (b) results of prior PL 480 research and (c) proposed new PL 480 studies on pork quality.

Germany: On May 20, 14 leading German Farmers and Agribusiness representatives visited with Drs. Leffel, Devine, Sloger, and Weber of the Plant Nutrition Laboratory, Mrs. June Jones of the Small Grain Collection and Dr. C. H. Hanson of the Applied Plant Genetics Laboratory.

USSR: On May 28, a group of 10 Provisional Governors from USSR visited BARC immediately following their visit to the White House. I had the pleasure of showing some of our research to this important group. They were on their way to the National Governors Conference in Seattle, Washington.

Philadelphia: Forty-four members of the Geographical Society of Philadelphia visited the Agricultural Research Center on May 22. Mr. Carter spent five hours showing them various research projects on both sides of the Center.

Prince George's County: As part of the program of Prince George's County's Career Education In-Service Course, which included ten visits to industry and government installations, the group visited Beltsville. We have received word that the participants evaluated their visit to BARC as one of the highest in interest and that they felt we had done a thorough job of preparation and told them the things they needed to know about careers at Beltsville.

Apple Industry: A bus load of leading apple industry people visited Beltsville and the orchards on Sunday, June 2. They were in Washington, D. C. attending the Annual Meetings of the International Apple Institute, Drs. M. Faust and C. B. Shear of the Fruit Laboratory, and Dr. R. E. Hardenburg of the Horticultural Crops Marketing Laboratory discussed their research.

Biographical Sketches

The more we know about one another, the easier it is to work together. In an effort to increase our knowledge, we are initiating a program of including "Biographical Sketches" as a regular part of the Notes From the Director. This issue contains three, the Center Director and the two Assistant Directors. Future issues will contain four. The sequence will be Institute Chairmen, Laboratory Chiefs, scientists receiving awards, etc. The termination is flexible and has not been established.

Dr. A. A. Hanson was born in British Columbia and received his training at the University of British Columbia, McGill University, and the Pennsylvania State University. He served as Lecturer and Assistant Professor at Macdonald College, Quebec, from 1946 to 1949. He joined ARS as a geneticist, U.S. Regional Pasture Research Laboratory, University Park, Pennsylvania, in 1949. In 1953 he transferred to Beltsville as Research Leader for Grass and Turf Investigations. In 1965 he became Chief, Forage and Range Research Branch. Concurrent with the reorganization, he became Director, Beltsville Agricultural Research Center.

His personal research dealt with the breeding and cytogenetics of grasses and legumes for forage use and with the improvement and management of turfgrasses. Dr. Hanson's research is reported in excess of 100 technical articles. He served as Editor of the ASA monograph "Turfgrass Science," Editor of Crop Science (1962-64) and Editor of the Journal of Environmental Quality (1971-73). Dr. Hanson was elected President of the Crop Science Society of America, (1966-67). He has participated in reviewing agricultural research programs in Latin America, Vietnam, Japan, Europe, and the USSR.

Dr. Paul A. Putnam was born in Vermont and received his B.S. from the University of Vermont in 1952, his M.S. from Washington State University in 1954, and his Ph.D. degree in animal nutrition from Cornell University in 1957.

He joined ARS as a Research Animal Scientist, Beef Cattle Research Branch, Animal Husbandry Research Division, Beltsville Agricultural Research Center, upon completion of his doctorate. He became Research Leader, Nutrition and Management Investigations, in 1966, Acting Branch Chief in 1968, Branch Chief in 1969. Concurrent with the reorganization in 1972, he became one of the Assistant Directors, BARC.

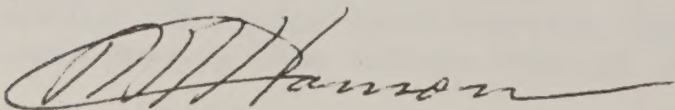
His personal research with dairy and beef cattle involved feed processing, non-protein nitrogen, feeding behavior, and salivary secretion. Dr. Putnam's research is reported in over 80 technical articles. He has served as Secretary-Treasurer, Vice President and President of the Northeastern Section of the American Society of Animal Science sequentially from 1965-70. He has participated in reviewing agricultural programs in Senegal, Pakistan, India, and Israel. He is currently serving as Chairman of the BARC Master Plan Committee and President of the Beltsville Chapter of OPEDA.

Dr. C. Edith Weir was born in Ontario, Canada, and received her Associate Diploma, Macdonald Institute, Guelph, Canada, 1940; B.S., Foods and Nutrition, University of Toronto, Toronto, Canada, 1941; M.S., Nutrition, Massachusetts State College, Amherst, Massachusetts, 1943; and her Ph.D. in Food Technology, University of Massachusetts, Amherst, 1948.

She was employed by H. J. Heinz Company as a Chemist, Acting in Charge of Nutrition Research, for three years and was Head, Biological Sciences Department, Berkshire Hills College for Girls, for one year before joining USDA, Bureau of Animal Industry in Beltsville in 1949. Four years later, Dr. Weir left USDA to join the American Meat Institute Foundation. While there, she served on the faculty of Northwestern University for five years. She rejoined USDA as Assistant Director, Human Nutrition Research Division, BARC. Concurrent with the reorganization, she became one of the Assistant Directors, BARC.

Her personal research both with USDA and outside involved nutritional, sensory, and functional qualities of foods and basic nutrition. As Assistant Division Director she was responsible for planning and evaluating an applied and basic research program in human nutrition.

Dr. Weir has been active in and held important offices in several professional societies, lectured at several universities and before numerous professional groups. She serves on a task group established in 1969 by ARPAC to evaluate research on human nutrition in the United States and to prepare a model for systems analysis of human nutrition research. This detail is expected to result in a model for systems analysis of research applicable Department wide.



A. A. Hanson, Director
Beltsville Agricultural Research Center

UNITED STATES DEPARTMENT OF AGRICULTURE
AGRICULTURAL RESEARCH SERVICE
NORTHEASTERN REGION
AGRICULTURAL RESEARCH CENTER
BELTSVILLE, MARYLAND 20705

NOTES FROM THE DIRECTOR

No. 33

July 18, 1974

In Memorium - It is with sadness that we report the death of William M. Jones of the Analytical Chemistry Laboratory on June 8, 1974. In his 24 years of government service, Bill worked initially at the National Institutes of Health; then for General Services Administration; and joined ARS in 1965. He made significant contributions to pesticide residue analytical methodology relating to hydrocyanic acid, to a general procedure for determining carbamate pesticides, to dichlorvos on greenhouse vegetables, to pesticide use and distribution in aircraft, and to automation of cleanup and detection as a continuous process for the rapid determination of phosphate- and sulfur-containing pesticides. He will be greatly missed.

Employee Activities

ARS Packaging Research - By invitations from the Commissioner and the Director of Markets, New York Department of Agriculture and Markets, Donald R. Stokes, Transportation & Packaging Research Laboratory, attended the Sixth Annual Lettuce Luncheon of New York State lettuce growers and buyers, Syracuse, New York. Mr. Stokes encouraged palletization and bulk-bin shipments to reduce cost of packaging and handling. He also met with members of the Subcommittee on Transport Package Size, American National Standards Institute. Representatives of United Fresh Fruit & Vegetable Association, National Associations of Food Chains, International Apple Institute, Western Growers Association, Grocery Pallet Council, and National Associations of Agriculture also attended to consider recommended pallet sizes.

Examination Committee Service - Dr. Willis W. Wirth, Systematic Entomology Laboratory, recently served on Examination Committees for three graduate students in the Department of Entomology, University of Maryland. He provided technical direction of their research on taxonomy of ceratopogonid flies.

K-H International Appointment - Robert F. Guilfoy, Transportation & Packaging Research Laboratory, has been appointed Acting Chief Delegate for the U.S. to a Working Group of Technical Committee 104, International Standards Organization. He attended a Working Group meeting in London. The Working Group is concerned with developing designs and performance standards for thermal-type van containers for transporting perishable foods.

Insect Collection Studied and Identified - Dr. Douglas R. Miller, Systematic Entomology Laboratory, studied scale insects in the Florida State Collection of Arthropods, Gainesville, Florida. He identified the undetermined mealybugs and verified identifications of over 2,000 slide-mounted scale insects.

Training Course Presentation - T. E. Amerault, Haemoprotozoan Diseases Laboratory, organized and presented a training course in rapid card agglutination test for bovine anaplasmosis for APHIS technicians in six regional workshops.

Foreign Cockroach Research - Dr. Ashley B. Gurney, Systematic Entomology Laboratory, completed identification of cockroaches from Columbia, South America, submitted by Dr. Helmut Sturm, Marienburger Platz, West Germany. The German zoologist and Columbian colleagues studied species of plants and animals associated with habitats and biological zones. Maglалena Valley at low elevation and Paramo-type vegetation at high elevation were studied in depth yielding 20 species. Seven species and two new genera were found. Cockroaches are frequently imported from South America on bananas, orchids, and bromeliads.

"Energy Conversion" was the main topic at the Third Annual Meeting, Greenhouse Engineering Systems Committee, Land Grant Colleges and USDA. ARS was represented by Mr. William A. Bailey, Transportation & Packaging Research Laboratory. Since the Federal Energy Office included floriculture, nursery, and horticulture specialties under agricultural production, the greenhouse industry will receive 100 percent of fuel needs.

Multi-author Manuscript Effort - Dr. John A. Alford, Chief, Dairy Foods Nutrition Laboratory; Dr. Byron H. Webb, former Chief, Dairy Products Laboratory, and Dr. Arnold H. Johnson, retired Director of Research, Kraftco, Inc., Glenview, Illinois, completed editing of the Second Edition, Fundamentals of Dairy Chemistry. The volume contains 14 chapters and over 4400 references written by 23 scientists from seven state universities, industry, and USDA. ARS authors include J. A. Alford, R. E. Hargrove, N. P. Wong, W. G. Gordon, E. B. Kalan, D. P. Schwartz, O. W. Parks, H. M. Farrell, M. P. Thompson, R. M. Parry, A. M. Hartman, L. P. Dryden, and F. E. Kurtz, retired. The book is published by Avis Publishing Company, Westport, Connecticut.

TODAY Revisited - Dr. H. Marc Cathey, Chief, Ornamentals Laboratory, appeared for the fourth time on the TODAY Show. He gave a 13-minute demonstration on "High-Risk Flowers," covering turning of cut flowers into fresh flowers, background on bacteria in vase water, steps to fresher flowers, and use of table sugar and chemicals to inhibit bacteria and fungi. Dr. Cathey is scheduled for his fifth and last appearance in late August. Watch for him.

Bolivian Research on Coca - Dr. James A. Duke, Chief, Plant Taxonomy Laboratory; Harold Winter, Germplasm Resources Laboratory; and Murray Gaskins, University of Florida, recently returned from Bolivia, South America. After visiting field locations of Coca, a plant from which cocaine is made, they were asked to make recommendations for alternative crops for Coca.

Invited Papers

Dr. Charles D. Foy, Plant Stress Laboratory, conducted an invitational seminar "Response of Plant Genotypes to Mineral Stress Factors in Acid Soils and Mine Spoils," in the Agronomy Department, Ohio Agricultural Research and Development Center, Wooster, Ohio. While there, Dr. Foy also conferred with Drs. H. N. Lafever, Plant Breeder, Ohio State University and Ralph Clark, Plant Physiologist, USDA, concerning their collaborative research on differential responses of plants to mineral stresses. Dr. Lafever and Dr. Foy are doing cooperative research to develop wheat varieties with increased tolerance to excess soluble aluminum in acid subsoils.

Lyman B. Crittenden, Avian Physiology Laboratory, presented an invitational paper entitled "Two Levels of Genetic Resistance to Lymphoid Leukosis," at a symposium on that subject sponsored by the American Association of Avian Pathologists held in conjunction with the Annual Convention, American Veterinary Medical Association, Denver, Colorado.

Cooperative Activities

Minority-owned Business to Result from Study - Jesse W. Goble, Chief, Dairy & Poultry Products Marketing Laboratory, completed a study in cooperation with Dr. J. M. Vandepopuliere, University of Missouri, to develop a facility layout and operating methods for a new wholesale poultry and egg business. The facility is to be in a low income area of Kansas City and is to be owned and operated by a young member of a minority group. The facility is designed for cutting and tray packing chickens and for handling cartoned eggs, cheese, and milk primarily for distribution wholesale to other minority owned businesses.

New Genetics Research Cooperative Agreement - Drs. Charles Sloger and Lowell Owens, Plant Nutrition Laboratory, announce the approval of a Specific Cooperative Agreement with Dr. Raymond Valentine, University of California, San Diego. Recent Rhizobium genetics research indicates nitrogen fixation genes and their regulator gene are clustered on a plasmid (extrachromosomal circular DNA) which are transferable to another bacteria. Goals of this cooperative agreement are to genetically improve N_2 -fixing capacity of Rhizobium in symbiosis with legumes and to study gene transfer into higher plant protoplasts via bacterial plasmids.

ARS Experimental Refrigerator Van Makes Maiden Voyage - Transportation & Packaging Research Laboratory is coordinating a joint research project in which an ARS experimental refrigerated van container will test ship 30,000 pounds of lettuce, celery, cabbage, and carrots for Defense Supply Agency, Salinas, California, via containership of the American President Lines to Puson, Korea. Other participants in the joint project include Southern and Western Regions, ARS; Department of Defense, and commercial organizations.

Food Distribution Center Development - The Food Distribution Research Laboratory conducted and reported research, USDA, Marketing Research Report No. 987, "Food Distribution Facilities for Wilkes-Barre and Scranton, Pennsylvania." As a result of this study, the Economic Development Administration approved a \$1.2 million grant for development of a 206-acre food distribution center midway between the cities. Avoca Industrial Development Company will construct the complex. Local sources will provide an additional \$1.5 million. The new center will be used by food distributors forced to move because of Tropical Storm Agnes. It is envisioned that the new center may eventually serve the entire Northeastern U.S.

Shipping Stock Experiments - B. Hunt Ashby and Karl E. Hoke, Transportation & Packaging Research Laboratory, recently accompanied a jet cargo plane load of hog and beef cattle breeding stock from Chicago to Seoul, Korea. This is

the first of a series of shipping experiments in cooperation with Illinois Produce International and Flying Tiger Airlines to determine causes for mortality losses in transit. Inflight environmental conditions were monitored and animal responses observed.

Research Accomplishments Displayed - Clarence Harris, Dairy and Poultry Products Marketing Laboratory, assisted by two employees from the Animal Products Laboratory, Richard B. Russell Agricultural Research Center, Athens, Georgia, displayed examples of ARS research accomplishments at the recent Fact Finding Conference, Poultry and Egg Institute of America, New Orleans, Louisiana. Movies of an experimental poultry coop destacker-restacker and a turkey deboning operation using a shackle development by ARS were shown. Attendance was estimated at 4,500.

Honors and Awards

Thomas E. Amerault, Thomas O. Roby, Joseph E. Rose, and Richard L. Sealock of the Animal Parasitology Institute were recipients of certificates of appreciation from APHIS for their contributions to the development of a rapid, practical and reliable diagnostic test for bovine anaplasmosis.

Gloria Stiltner, Hydrograph Laboratory, received a Certificate of Appreciation and Cash Award. Due to her ingenuity, she improved the efficiency of the Laboratory's computer operations resulting in a \$25,000 yearly savings in cost and a significant increase in production of the research program.

Dr. L. L. Danielson, Chairman, Agricultural Environmental Quality Institute, and Dr. D. L. Klingman, Chief, Field Crops Laboratory, were named Fellows of the Weed Science Society of America.

William A. Dungey, Light & Plant Growth Laboratory, received a Certificate of Appreciation and a Cash Award. He made a significant contribution to a special assignment and his performance significantly exceeded present requirements for his position description.

Gordon T. Carpenter, Fruit Laboratory, received a Certificate of Appreciation and a Cash Award. He made an employee suggestion for saving gasoline by using trailers for hauling equipment and supplies on BARC.

Kenneth R. Goodson, Animal Parasitology Institute received a Certificate of Appreciation and a Cash Award. He developed useful methods in the preparation of tissue culture and bacteriological media.

Lawrence H. Whitehead, Division of Operations, received a Certificate of Appreciation and a Cash Award. He made an employee suggestion to hinge the plexiglass panels around air conditioners for ventilation instead of using fixed panels.

Wendell H. Headley, Plant Genetics and Germplasm Institute, received a Certificate of Appreciation and a Cash Award. During an emergency that disrupted electricity and heat to greenhouse facilities, he worked 20 consecutive hours making adjustments so that valuable research studies were not damaged.

John A. Sauls, Genetics and Management Laboratory, received a Certificate of Appreciation and a Cash Award. He developed laboratory procedures and equipment that significantly increased reliability of data obtained in studies of milking systems.

Quality Within-Grade Increases

Mary W. Marshall, Lipid Nutrition Laboratory
 Wilma C. Ross, Non-Ruminant Animal Nutrition Laboratory
 Sara L. Cordiero, Instrumentation Research Laboratory
 George W. Pittarelli, Tobacco Laboratory
 Delores Sessions, Post-Harvest Physiology Laboratory
 Carolyn D. Williamson, Nutrition Institute
 Alinda R. McGrew, Plant Protection Institute
 Evelyn L. Jackson, Lipid Nutrition Laboratory

Visitors

Russia - Dr. Ravel S. Fedoruk, U. N. Social Affairs Officer, and Dr. Valery Skatchov, also from the U. N. in New York, visited BARC before returning to Russia. They particularly enjoyed seeing the Small Grain Collection and visiting with Mrs. June Jones.

Chile - Professor Raul Cortes, Professor of Entomology, Universidad de Chile, Santiago, visited the Systematic Entomology Laboratory, consulting with Laboratory specialists and studying the National Collection of Insects.

Romania - Madam Liudmila Negulescu, Recorder of Pesticides for Romania, and Mr. Retie Ursiano, Deputy, Department of Agriculture in Romania, visited BARC. They met with Dr. Danielson, Mr. Jacobson, Dr. Beroza, Mr. Spence, and Mr. Jones of AEQI and Drs. Endo, Feldmesser, Golden, and Mrs. Harrington in PPI.

Korea - Dr. Sul Kin Ho, Ministry of Agriculture, Seoul, Korea, visited the Vegetable Laboratory to discuss the vegetable research program and arrange for an exchange of germplasm.

Australia - Mr. R. A. H. Sedgwich and Mr. J. O. Pershouse of the Committee of Direction of Fruit Marketing, Queensland, Australia, talked with Howard Hruschka and Wilson Smith, Horticultural Crops Marketing Laboratory, about problems in postharvest handling and preservation of fruits and vegetables. They were particularly interested in clean wash waters and sanitation as methods of controlling postharvest decay.

Italy - Dr. Pasquale Rosati, fruit specialist, Istituto Sperimentale Per La Frutticoltura, Italian Ministry of Agriculture, Rome, visited the Fruit Laboratory for several days in May. Drs. Rosati and Scott have had informal exchanges of strawberry breeding material for several years and Dr. Rosati was here to observe USDA material in field plots. He also visited strawberry research stations in California while in the United States.

Multiple Foreign - Thirty participants, from 22 different countries, in the Economic Development Institute's National Economic Management Course, visited the Center recently. Several of them mentioned future plans for inviting teams of U. S. scientists to visit their countries on various assistant missions and cooperative projects.

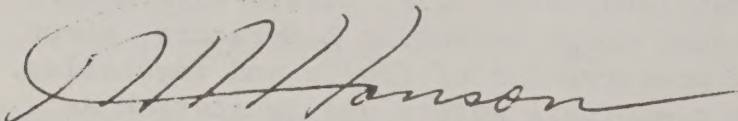
Nine countries were represented by 17 visitors from the USDA Graduate School's Agro-Industrial and Industrial Development Management Training Program on May 6. The six-hour tour was given by Mr. Morgan and Mr. Fleming. Several of the visitors were familiar with projects discussed because of similar problems in their own countries.

Maryland - Twenty members of the Maryland Rural Affairs Committee visited BARC. Dr. R. L. Green, Acting Director, Maryland Agricultural Experiment Station, and Dr. R. E. Wagner, Director of Extension, University of Maryland, accompanied the group. Their visit included stops at the Air Pollution Laboratory, Pesticide Degradation Laboratory, and Applied Plant Genetics Laboratory.

Alabama - Mr. Herley C. Thompson, Garden Editor of Southern Living Magazine, Birmingham, Alabama, visited the Vegetable Laboratory recently to discuss ongoing research and develop the potential for publication of popular-type versions of appropriate vegetable research results in the Southern Living Magazine.

Florida - Dr. Robert Woodruff, Department of Entomology, Florida State University, participated in the Systematic Entomology Laboratory's visiting scientist program. He and Dr. Robert D. Gordon of SEL sorted approximately 120,000 scarabaeid beetles to subfamily and tribe and rearranged the collection of this family to accommodate the newly determined material. Research was completed on Aphodius beetles associated with ants, including description of a new species, and progress was made on a revision of the Mexican species of Aphodius.

Most of the Institutes and Laboratories are submitting material regularly for the NOTES FROM THE DIRECTOR. Those not submitting this information are encouraged to do so. It helps each employee to better know what their fellow employees are doing.



A. A. Hanson, Director
Beltsville Agricultural Research Center

UNITED STATES DEPARTMENT OF AGRICULTURE
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NOTES FROM THE DIRECTOR

No. 34

August 8, 1974

Employee Activities

Princeton Fellow Returns - Dr. Essex E. Finney, Jr., one of 17 mid-career Federal employees at Princeton University during the past year, has returned to his work within the Agricultural Marketing Research Institute at Beltsville. During the past year, Dr. Finney held a Fellowship in the Woodrow Wilson School of Public and International Affairs at Princeton and was involved in an active program of course work relating to administrative leadership, law and public policy, economics, and the role of science in the modern world. The program is designed to prepare Federal employees at the Mid-career level to assume greater responsibilities in careers in public service. Dr. Craig Weigand, an ARS soil physicist from Weslaco, Texas, will participate in the same program during the 1974-75 school year.

Dr. Harold S. Ricker, Food Distribution Laboratory, served as Acting Chairman in Dr. Finney's absence and we wish to commend him for a job well done.

Suspected Poisoning - Recently, mushrooms suspected of poisoning a 17-month old child in Springfield, Virginia, were brought to the Poison Fungi Center at the Mycology Laboratory for identification. Dr. Joseph F. Ammirati, Jr., Research Botanist, determined them to be Marasmius oreades, a species which has caused isolated milk poisonings in Europe but is generally harmless in the United States. No symptoms developed, and a notice later appeared in the Washington Star-News describing the incident and commending Sgt. Gary Heath of the Fairfax County Police Department who rushed the mushrooms to Beltsville.

Television Appearance - Dr. William Cantelo of the Vegetable Laboratory, appeared on the TV program "Across the Fence." He described ways to control insect pests without using insecticides in the homeowner's vegetable garden. Included were several methods developed by Beltsville scientists.

Chapter President Elected - Mr. Robert L. Almond, Sr., Head, Division of Operations, has been elected President of the Potomac Chapter of the American Institute of Plant Engineers for 1974-75.

Vegetable Improvement Discussion - Dr. Raymon E. Webb presented a discussion on vegetable improvement research at BARC to the Garden Seed Division of the Pacific Seedsmen's Association, June 13, during their annual meeting in Sun Valley, Idaho.

Scale Insect Training Session - Drs. Douglass R. Miller and Manya B. Stoetzel, Insect Identification and Beneficial Insect Introduction Institute, recently participated as instructors in a short course on the identification, biology, and control of economic scale insects in the United States. The two-week session was held at the Department of Entomology, University of Maryland, and

was attended by 21 participants and 8 instructors. In addition to daily sessions studying scale insect systematics, one afternoon was spent touring the facilities of the Systematic Entomology Laboratory. Mrs. Dorothy S. Jessop, IIBIII, also attended the session as a participant.

New Appointment - Dr. Manya B. Stoetzel joined the staff of the Systematic Entomology Laboratory on June 17, 1974. Dr. Stoetzel studied at Rice University, the University of Wisconsin at River Falls, and Iowa State University before she entered the University of Maryland where she earned the BS, MS, and Ph. D. degrees. She was a recipient of the graduate student award of the Eastern Branch of the Entomological Society of America. Dr. Stoetzel has been working on the taxonomy, biology, habits, parasites and predators of scale insects, and in SEL will continue these investigations and undertake new studies of aphids and related insects with Miss Louise Russell.

Appointment to Board - Dr. Cecil H. Wadleigh, Consulting Plant Physiologist, Hydrograph Laboratory, has been appointed to the Board on Agriculture and Renewable Resources of the National Research Council - National Academy of Sciences. This Board serves as an advisory group to government agencies, particularly the U.S. Department of Agriculture and the State Agricultural Experiment Stations, on pressing problems that may be advantageously evaluated by an independent group.

Editorial Committee Meeting Attendance - Dr. Curtis W. Sabrosky, Leader, Diptera Research Group, Systematic Entomology Laboratory, attended a meeting in London, England, recently, of the Editorial Committee for the 3rd Edition of the International Code of Zoological Nomenclature. It is planned that this new edition should be completed, and the manuscript approved by the International Commission on Zoological Nomenclature, in time for formal presentation to the Division of Zoology of the International Union of Biological Sciences at its next meeting in September 1976. Publication should be in early 1977.

Arizona Research Travel - Dr. John M. Kingsolver, Leader, Coleoptera Research Group, Systematic Entomology Laboratory, travelled to Arizona in June. At Northern Arizona University, Flagstaff, he visited Dr. C. D. Johnson who is involved in research on seed-beetles under a USDA grant, and at Phoenix he consulted with botanists and entomologists who are writing up the results of an International Biological Project on the ecology of desert scrub areas in North and South America. Dr. Kingsolver is one of the authors of this project, writing a chapter on insects and invertebrates associated with Prosopis, or mesquite.

Invited Papers and Seminars

"Thermal Death of Bacteria" was the topic of an invitational seminar presented by Dr. William Moats, Dairy & Poultry Products Marketing Laboratory, to the Microbiology Department, University of Guelph, Guelph, Ontario, Canada, recently. Dr. Moats also held discussions with faculty and graduate students of the Microbiology Department with regard to use of equations which he developed.

"Fate in Soils of Pesticides Used in Minimum-Tillage Practices in the Southeast" was the title of an invitational paper delivered by Dr. Charles S. Helling, Pesticide Degradation Laboratory, at the Annual Meeting of the Georgia Chapter, Soil Conservation Society of America. The meeting dealt entirely with minimum tillage and its environmental effects.

European Workshop-type Symposium - Dr. J. M. Kaper, Research Chemist in the Plant Virology Laboratory, recently returned from a trip to Belgium, France, and Spain. He participated in a 3-day workshop-type symposium in Ghent, Belgium, on "Problems of Cucumber Mosaic Virus (SMV) in Fundamental and Agricultural Research," organized by the European Discussion Group on Plant Pathology who had invited him to give the introductory lecture on "The chemistry and molecular organization of CMV." Dr. Kaper visited virus research laboratories in Belgium and Holland and delivered invitational lectures at the Institut de Biologie Moleculaire et Cellulaire, C.N.R.S., Strasbourg, France; and Station de Physiologie et de Biochimie Vegetales, I.N.R.A., Bordeaux, France.

Programs for Genetic Evaluation was the subject of an invited paper presented by Dr. F. N. Dickinson, Chief, Animal Improvement Programs Laboratory, at the Symposium on Expanding the Influence and Participation in the National Cooperative Dairy Herd Improvement Program, during the recent annual meeting of the American Dairy Science Association in Guelph, Ontario, Canada. Dr. Dickinson also chaired a session of scientific papers on Pedigree Evaluation and a special symposium on Choosing and Sampling Dairy Sires at which he presented a Summary paper.

Honors and Awards

Norris Receives Top ASAE Award - Karl H. Norris, Chief of the Instrumentation Research Laboratory, received the Cyrus H. McCormick Medal during the June meeting of the American Society of Agricultural Engineers (ASAE) at Stillwater, Oklahoma. The McCormick Medal is the oldest and most distinguished award which ASAE can confer upon its members. The award, first presented in 1932, recognizes "exceptional and meritorious engineering achievement in agriculture." Norris' specific contributions relate primarily to the development of instrumentation for quality evaluation of agricultural and food commodities.

Frank N. Meyer Memorial Medal - Mr. Howard L. Hyland, principal plant introduction officer, Germplasm Resources Laboratory, was awarded the Frank N. Meyer Memorial Medal at the annual meeting of the Society of Economic Botany in East Lansing, Michigan. Mr. Hyland richly deserved this honor for his distinguished service in the field of plant introduction. Probably no agriculturist is better known and more appreciated by plant breeders around the world than is Mr. Hyland. He has helped many of them over the past 25 years with their critical needs for germplasm and has provided invaluable assistance to countries in establishing plant introduction programs. The President of the Society of Economic Botany, Dr. Howard Scott Gentry, a retired ARS plant collector and former associate of Howard Hyland, made the award presentation.

Invitation to Join Task Force - Dr. Julius Feldmesser, Nematology Laboratory, has accepted an invitation to join the Task Force on Primary Screening of the Nematode Control Agents Subcommittee of the American Society for Testing and Materials' Committee E-35 on Pesticides. The purpose of this ASTM Committee is to develop standard biological test methods and recommended procedures for determining activity and usefulness of nematode control agents, and to help establish national standards used in registration and labeling of pesticides.

Executive Board Election - Dr. Anthony W. Kotula, Chief, Livestock & Meat Marketing Laboratory, was elected to the Executive Board of Directors of the American Association of Meat Science at the 27th Annual Reciprocal Meat

Conference, Texas A&M University, College Station. The Association, representing industry, government and academic institutions, has six Directors and each serves a two-year term.

A Certificate of Completion was awarded to Dr. Donald T. Krizek, Plant Stress Laboratory, for completion of the National Security Management Course by the Industrial College of the Armed Forces.

Correction - In the July issue of NOTES' Honors and Awards section, it was stated that Lawrence H. Whitehead, Division of Operations, received a cash award. He did..... but it was for a suggestion to install a safety shield in vehicles. Mr. Richard Giles, Division of Operations, received the award for suggesting hinging the plexiglass panels around air conditioners for ventilation instead of using fixed panels.

Cooperative Activities

U.S. - France Bilateral Agreement Program - Dr. Robert E. Davis, Plant Virology Laboratory, has spent the past year (FY 1974) in the laboratory of Dr. J. B. Bove, Station de Physiologie et de Biochimie Vegetales, I.N.R.A., Bordeaux, France, on the cooperative U.S. - France Bilateral Agreement Program. He will continue his collaborative research on plant-inhabiting mycoplasmas and spiroplasmas in Dr. Bove's laboratory through September 20, 1974, returning to Beltsville at the close of the International Congress on Mycoplasmas, Spiroplasmas, and Related Organisms, which he is helping to organize. Dr. Davis was instrumental in the discovery of a new type of organism, "Spiroplasma," as the probably etiological agent of corn stunt disease (an important disease of corn in Mexico and potentially important in southern United States). In France he has conducted experiments with Spiroplasma citri which can be grown in vitro and has continued his efforts to develop growth media which will support in vitro cultures of the spiroplasma associated with corn stunt disease.

Rhinoceros Beetle Project - Since 1964, research to find a means of controlling the coconut rhinoceros beetle, Oryctes rhinoceros (L.), has been conducted under the sponsorship of the United Nations Development Program by the South Pacific Commission Rhinoceros Beetle Project at Western Samoa. The depredations of the beetle, a serious pest of the coconut palm, has endangered the economy of many Pacific Islands that depend on copra (coconut meat). According to Dr. Peter Maddison, an entomologist at Western Samoa, the problem has now been solved by trapping the beetles with an attractant, inoculating the beetles with a virus, and then releasing them to spread the virus. The attractant ethyl chrysanthemumate, called rhinolure, was found by Beltsville Chemists Dr. T. P. McGovern and Dr. Morton Beroza in a cooperative project with Dr. Maddison. Dr. Maddison states that the attractant recovers as many as 60% of the beetles. This project is an example of one of the newer non-insecticidal approaches to insect control.

Smithsonian Festival - The Plant Stress Laboratory participated in the 1974 Smithsonian Festival of American Folklife on the Mall in Washington during July by furnishing 4,000 cotton plants and technical advice for planting a Mississippi cotton field in the Regional America display. The cotton field evoked much comment and was pictured in the Washington Star-News and many Southern newspapers.

Award for Cooperative Research - Dr. Donald T. Krizek, Plant Stress Laboratory, and Chairman-Elect of the American Society for Horticultural Sciences' Special Committee on Growth Chamber Environments, was recently notified that the Committee has been awarded a two-year grant of \$29,500 by the National Science Foundation to continue its efforts at conducting base-line growth studies on selected horticultural species, and in standardizing controlled-environment research in plant growth facilities. Cooperative research is being conducted at several laboratories in the United States and Canada by the nine members of this Committee.

U.S. - Spain Bilateral Cooperation - Dr. V. G. Pursel, Reproduction Laboratory, spent the last two weeks of May in Madrid, Spain, assisting researchers at the Animal Reproduction Laboratory of the Instituto Nacional de Investigaciones Agrarias (INIA) in the development of their research program on artificial insemination. During the visit he presented three seminars covering various aspects of his research at Beltsville.

Visitors From:

Rumania - Dr. A. P. Barbulescu, Research Institute for Cereals and Forage Crops, Fundulea, Ilfov, Rumania, toured the Systematic Entomology Laboratory recently. He has been in the United States for a year working on plant resistance to insects.

South Africa - Mr. Joe Minne, chemist, Veterinary Research Institute, Onderstepoort, visited with Dr. Alan Taylor and Mr. Joseph Caro, Agricultural Chemicals Management Laboratory, to discuss pesticide residue analysis and pesticide sampling.

Australia - Mr. John Kemp, Queensland, and Agricultural Attaches from the Australian Embassy, visited briefly with Dr. F. D. Enzie, Chairman, Animal Parasitology Institute. They discussed the Institute's organization and current research program, with particular emphasis on research pertaining to helminthic diseases of sheep and cattle.

Italy - Dr. Enrico Porceddu, Director of the Germplasm Resources Laboratory, Bari, Italy, visited P&GI's Germplasm Resources Laboratory recently. Dr. Porceddu was particularly interested in plant introduction procedures and accession documentation methods, and reviewed the operations pertaining to the Small Grains Collection. In May, Dr. White, Chief of the Laboratory, and Dr. Koert J. Lessman, Purdue University, visited with Dr. Porceddu in Bari and received outstanding assistance in their collecting of Crambe hispanica in Italy.

Japan - Dr. Tetsushiro Baba, plant pathologist of the Division of Plant Disease and Insect Pests, Hokkaido Central Agricultural Experiment Station, Japan, visited the Soilborne Diseases Laboratory recently to discuss biological, cultural, and integrated control of soilborne plant pathogens. Dr. Baba presented to the members of the Soilborne Diseases Laboratory his views and his institution's policies on control of soilborne plant maladies.

Biographical Sketches

Dr. H. R. Carns was born in Cedar Rapids, Iowa, and received his B.S. in 1940, his M.S. in 1942 from the University of Iowa, and his Ph.D. in plant physiology from the University of California, Los Angeles, in 1951.

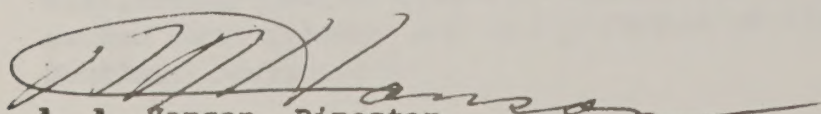
He joined ARS as a plant physiologist at the Delta Branch Experiment Station, Stoneville, Mississippi, in 1950. In 1957, he transferred to the Department of Botany, University of California, Los Angeles. He transferred to Beltsville in 1961 as Research Leader for Cotton Physiology Investigations. Concurrent with reorganization, he became Chairman, Plant Physiology Institute, BARC.

His personal research dealt with the defoliation of the cotton plant, the physiology of abscission of fruits and leaves, the role of naturally occurring growth regulators in cotton plant growth and development. Dr. Carns' research is reported in over 55 publications. He served as Permanent Chairman of the Annual Defoliation and Physiology Conference (1961-1972) and served as Member of Steering Committee, Beltsville Production and Mechanization Conference (1961-1970). He has served as consultant to the Agency for International Development, Turkey, and as ARS representative to the 26th Plenary Session of the International Cotton Advisory Committee, Amsterdam, Holland.

Dr. L. L. Danielson was born in Nebraska and received his training at the State University of Iowa. He received the B.A. in chemistry and the M.S. in plant physiology and chemistry. He was granted the Ph.D. in plant physiology and analytical chemistry in 1941. He was employed as a chemist and plant physiologist with the Virginia Truck Experiment Station from 1945 to 1957. He joined ARS at Beltsville in 1957 to lead research in weed control in horticultural crops and served as Investigations Leader in this field from 1960 to 1972. He was Acting Branch Chief of the Crops Protection Research Branch at the time of the reorganization. Concurrent with the reorganization, he became Chairman, Agricultural Environmental Quality Institute, BARC.

He conducted pioneering research in the use of herbicides to control weeds in vegetable crop plantings. He pioneered the development of granular herbicide technology and has published numerous journal papers and popular articles in his field of science.

Dr. Danielson served as president of the Northeastern Weed Science Society in 1956 and the Weed Science Society of America in 1970-71. He served in many other offices in each of these organizations and was elected a Fellow of the Weed Science Society of America in 1974. He is a member of the FAO Working Party on the Official Control of Pesticides-Section B-Specifications and is a liaison member of the Armed Forces Pest Control Board. He serves on several additional local, regional, and national committees and has monitored research grants, contracts, and cooperative agreements in several States, Yugoslavia, and Egypt. He has served as leader in the publication of ARS-USDA Handbook No. 447 entitled "Guidelines for Weed Control," in 1972, and is presently serving as leader in the periodic revision of this handbook.


A. A. Hanson, Director
Beltsville Agricultural Research Center

UNITED STATES DEPARTMENT OF AGRICULTURE
AGRICULTURAL RESEARCH SERVICE
NORTHEASTERN REGION
AGRICULTURAL RESEARCH CENTER
BELTSVILLE, MARYLAND 20705

NOTES FROM THE DIRECTOR

No. 35

September 5, 1974

Employee Activities

Subcommittee on US-USSR Scientific Exchange - Dr. A. M. Heimpel, Chief, Insect Pathology Laboratory, recently was asked to join the US-USSR Working Group on the Production of Substances by Microbial Means. Dr. Heimpel is coordinator for joint projects on microbial control to be carried out by U.S. and USSR scientists over the next few years. The projects are: the production of sporulated cultures of Bacillus popilliae, the Japanese beetle milky disease bacterium; the production of insect viruses in insect tissue culture lines; and standardization of microbial insect control agents.

Packaging Conference - Dr. R. E. Hardenburg, Chief, Horticultural Crops Marketing Laboratory, spoke on "Controlled Atmospheres for Quality Maintenance of Produce" at the First National Produce Packaging Conference in New York City. He was also chairman of a discussion session on transportation of fruits and vegetables.

Appointment to Editorial Board - Dr. James L. Vaughn of the Insect Pathology Laboratory was appointed to the Editorial Board of the Journal of Invertebrate Pathology. Dr. Vaughn is a specialist in insect tissue culture and virology.

Foreign Specimen Collection - Dr. George White, Chief, Germplasm Resources Laboratory, returned to his office in mid-July after about three months overseas. He, Dr. Lessman of Purdue, and Mr. Meyer from Vincennes, Indiana, collected seed of Crambe hispanica from wild populations in Israel, Cyprus, and Italy. Dr. White then proceeded to Morocco to collect three species while Dr. Lessman and Mr. Meyer continued their collecting efforts in Portugal and Spain. Crambe, already a relatively rare genus, will become rarer as populations are eliminated by intensive grazing and land development.

Research on Scarab Beetles - Dr. Robert D. Gordon, Systematic Entomology Laboratory, visited the Entomology Department of Oregon State University from Mid-June to mid-July. Financial support was shared by the University and ARS. Dr. Gordon divided his time between research on scarab beetles associated with rodents (ground squirrels and pocket gophers) and curating the scarab and coccinellid beetles in the OSU collection. He also advised graduate students working on Coleoptera and gave a seminar on the rodent-associated scarabs.

Dr. George E. Cantwell, Insect Pathology Laboratory, who was recently promoted to the rank of Lt. Colonel, Army Medical Service, U.S.A.R., has recently completed Phase III of the US Army Reserve Research and Development Education Program at the US Army Logistics Management Center and the Army Medical Department Command and General Staff Course at the Army Academy of Health Science at Fort Sam Houston, Texas.

Honors and Awards

Dr. Robert E. Hardenburg, Chief of the Horticultural Crops Marketing Laboratory, was recently elected as a Fellow of the American Society for Horticultural Science. Dr. Hardenburg was granted this distinction in recognition of his outstanding contributions and leadership in developing principles and practices used within the industry for packaging and storing fruits, vegetables, and flowers for maintaining high quality. A native of Ithaca, New York, Dr. Hardenburg has been an active research scientist with ARS since 1949.

Dr. A. M. Heimpel, Chief, Insect Pathology Laboratory, was elected President of the Society for Invertebrate Pathology at the Annual Meeting of the Society at Tempe, Arizona; the tenure of this post is two years. Dr. Heimpel was Vice-President of the Society from 1972 to 1974 and was founding Secretary-Treasurer from 1967 to 1969.

Dr. George E. Cantwell, Insect Pathology Laboratory, was elected President of the Professional Apiculturists Association at the Annual Meeting in Guelph, Ontario, Canada.

Mr. Richard H. Day, Horticultural Crops Marketing Laboratory, was recently awarded a \$200 Cash Award. The award was given in recognition of "Long-term superior performance of duties as a Biological Technician on greenhouse and laboratory research to extend the storage life of fresh fruits and vegetables."

Invited Papers

"Studies on the Specificity of Several Insect Cell Lines to Replication of Baculovirus" - Dr. Jean R. Adams, Insect Pathology Laboratory, together with R. H. Goodwin and T. A. Wilcox, presented this paper at the 32nd meeting of the Electron Microscopy Society of America in St. Louis, Missouri. Dr. Adams prepared a superb exhibit entitled "Insect Pathology." This exhibit will be sent all over the United States to universities for the next 12 months.

International Symposium on Fruit Ripening - Dr. M. Lieberman, Chief, Post-Harvest Plant Physiology Laboratory, presented an invited paper entitled "Specific Inhibitors of Ethylene Production as Retardants of Fruit Ripening," at the International Symposium on Regulation of Fruit Ripening which was held in Paris, July 1-5. Dr. Lieberman chaired a session at this meeting and visited and presented seminars at a number of laboratories engaged in plant physiology research.

Cooperative Activities

"Food Service Productivity" was the theme of two seminars conducted by John F. Freshwater, Food Distribution Research Laboratory, at the 29th Annual Conference of the Council on Hotel, Restaurant, and Institutional Education in Toronto, Canada. More than 200 educators from universities, community colleges, and vocational schools were in attendance.

Visitors From:

Pakistan - For the past few months the Mycology Laboratory at Beltsville has been host to Dr. Sultan Ahmad from Panjab University, Lahore, Pakistan. Dr. Ahmad, an internationally recognized botanist, is especially known for studies of the fungus flora of his region. During his stay here, he has completed a revision of the Ascomycetes of Pakistan, working primarily with Dr. L. R. Batra, cooperating scientist for Asian PL 480 projects.

Switzerland - Dr. S. Badoux, Federal Station for Agronomic Research, Breeding Section on Forage Plants, Nyon, Switzerland, visited BARC recently. He consulted with G. E. Carlson, Light & Plant Growth Laboratory, and with J. J. Murray and J. B. Powell of the Field Crops Laboratory on grass and legume management, seed production, and breeding studies.

Romania - Dr. Ion Arisanu, Director of the Central Research Station for Swine Breeding, Peris, Iltov, Romania, visited with Dr. L. T. Frobish, Nutrition Institute, and Dr. B. Bereskin, Animal Physiology & Genetics Institute. Dr. Arisanu, in the United States under the sponsorship of the National Science Foundation, discussed swine nutrition, production, and breeding research with our scientists.

Japan - Dr. Akio Ito, vegetable breeder with the Research Department, Takki Seed Company, Japan, visited the Vegetable Laboratory August 16. The purpose of his visit was to confer with scientists on recent developments in breeding spinach and cole crops.

Germany - Dr. Ernst-Friedrich Schulze of the Plant Protection Department, Farbwerke Hoechst AG, Frankfurt, Germany, visited the Insect Pathology Laboratory to consult about the commercial production of insect viruses in insect tissue culture lines. Apparently the Germans intend to start production of these excellent insect control agents.

Canada - Drs. R. M. Krupka and A. Vardain of the Canadian Department of Agriculture, London, Ontario, visited the Insect Pathology Laboratory for a general review and discussion of our research program.

England - Dr. D. C. Kelly of the AEAC Unit of Invertebrate Virology, Oxford, visited the Insect Pathology Laboratory to review the program.

Russia - Dr. Y. R. Shenderey, Deputy Chief, Main Administration of Microbiological Industry of USSR Council of Ministers, visited the Insect Pathology Laboratory to review our research. Accompanying Shendery were: I. V. Berezin, Dean of Chemical Faculty of Moscow State University; L. A. Mel'nikov, All-Union Research Institute of Protein Synthesis; V. I. Seregin, Main Administration of Microbiology Industry of the USSR Council of Ministers; V. V. Sukhodolets, Deputy Director of All-Union Research Institute of Genetics; and S. G. Yenikev, Kazan Institute for Chemical Technology.

Biographical Sketches

Dr. Burton Y. Endo was born in California and received his B.S. degree at Iowa State University in horticulture in 1951. After military service in the Army, he continued his studies at North Carolina State University where he received a Masters degree in horticulture in 1955 and in 1958 a Ph.D. degree in plant pathology. After receiving his Masters degree he accepted a position with the U.S. Department of Agriculture as a Nematologist, first at Raleigh, North Carolina, and then Jackson, Tennessee, before transferring to Beltsville. His research career continued at Beltsville in 1963 as a research scientist in the Nematology Investigations. In 1973, he was made Chief of the Nematology Laboratory and in 1974, Chairman of the Plant Protection Institute.

Dr. Endo's research in nematology is directed toward the histology and histochemistry of giant cells; morphology and histochemistry of soybean roots infected with Heterodera glycines; synthesis of nucleic acids at infection sites of soybean roots parasitized by Heterodera glycines; and ultrastructural investigation of several root-knot nematodes.

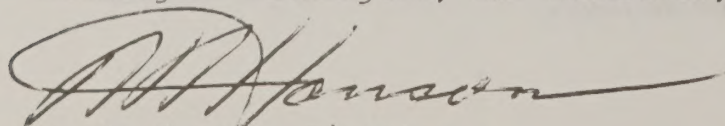
He is active in professional societies--from 1968 to the present, Secretary, Vice President, and President of the Society of Nematologists; serves on committees and associate editor for the American Phytopathological Society; member of Helminthological Society of Washington, Council for Agricultural Science and Technology, American Institute of Biological Sciences, American Institute for the Advancement of Science, and Sigma Xi.

His research had led to publications in scientific journals and presentations at scientific meetings including invitational papers at such meetings as the International Congress of Plant Pathology in London, England. He also cooperates with scientists in Egypt, India, and Poland on projects involving nematodes.

Dr. Lloyd V. Knutson was born in Illinois and received his B.A. degree from Macalester College in 1957, his M.S. from Cornell University in insect taxonomy in 1959, and his Ph.D. in limnology from Cornell in 1963.

He was employed as a research associate in the Department of Entomology at Cornell upon completion of his graduate studies. He joined the Systematic Entomology Laboratory, IIBIII, in 1968, and served as Resident Ecologist, Office of Environmental Sciences, Smithsonian Institution, on reimbursable detail during 1971-1972. He was appointed Chairman, Insect Identification and Beneficial Insect Introduction Institute during 1973.

His personal research centers around the biology and taxonomy of flies of importance in biological control, particularly the natural enemies of snail hosts of parasitic diseases of humans and domestic animals. He has published 50 scientific articles, based in part on his field work in Europe, Africa, and South America. He currently serves as Editor, Proceedings of the Entomological Society of Washington, and Treasurer, Society of Systematic Zoology.



A. A. Hanson, Director
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NOTES FROM THE DIRECTOR

No. 36

September 20, 1974

Employee Activities

Mexican Survey Trip - Dr. E. W. Baker, Systematic Entomology Laboratory, studied plant-feeding mites of the family Tetranychidae and Tenuipalpidae and predator mites associated with them in eleven States of Southern Mexico between June 26 and July 20. Accompanied by two collaborators, over 500 collections were made.

European Study - Dr. J. H. Graham, Plant Stress Laboratory, spent two weeks in July studying Verticillium wilt of alfalfa. He visited laboratories in Cambridge, England; Aberystwyth and Swansea, Wales; and Lusignan, France.

Scientific Exhibit - Dr. R. Fayer, Histoprotzoan Diseases Laboratory, presented a scientific exhibit and demonstration on the Life Cycle and Pathology of Sarcosporidiosis in cattle at the IIIth Annual Meeting of the American Veterinary Medical Association, Denver, Colorado. He was assisted by a scientist from Walter Reed Army Institute of Research.

Brazilian Lecture Tour - Dr. C. D. Foy, Plant Stress Laboratory, conducted an invitational lecture tour of several universities and experiment stations in Brazil. The lecture, which was entitled "Differential Aluminum and Manganese Tolerances of Plant Species and Varieties in Acid Soils," was presented first at the annual meeting of the Brazilian Plant Breeders Society at Recife, and later at Campinas, Porto Alegre, Brazilia, and Sete Lagoas. Other experiment stations visited were Manaus, Belem, and Cruz Alta.

Lepidopterists Meet - Drs. E. L. Todd, R. W. Hodges, and D. C. Ferguson, Systematic Entomology Laboratory, attended the 25th Annual Meeting of the Lepidopterists' Society held this year in California at the Los Angeles County Museum of Natural History, August 21-25. Four of their colleagues from the Smithsonian Institution were also present. Dr. Hodges is Vice-President. Dr. Ferguson, a member of the Executive Council, participated in a symposium on arctic Lepidoptera with a biogeographic paper entitled "The Grand Banks Refugium."

FDA and Wellcome Foundation Conference - Dr. T. O. Roby, Chief, Haemoprotzoan Diseases Laboratory, and Dr. F. D. Enzie, Chairman, Animal Parasitology Institute, participated in a conference with FDA officials and representatives of the Wellcome Foundation, London, England, concerning the efficacy and safety of imidocarb, an experimental treatment for bovine anaplasmosis and equine piroplasmosis. Chemotherapeutic studies involving the use of imidocarb against experimentally induced infections of both diseases have been underway at Beltsville for some time.

New Appointment - Dr. F. Christian Thompson joined the staff of the Systematic Entomology Laboratory, IIBIII, on June 23. Dr. Thompson was awarded his B.S. and Ph.D. degrees, with majors in entomology, at the University of Massachusetts, Amherst, and has served as consultant to the Reclamation Board, Massachusetts Department of Agriculture and as a medical entomologist on the Pacific Program, Smithsonian Institution. For the past two years he has been responsible for the identification and curating of the Diptera (fly) collections of the American Museum of Natural History in New York and will continue in the SEL as a systematist with research and service responsibilities on flies having medical and biological control significance.

Veterinary Parasitologists Meet - M. L. Colglazier, Ruminant Helminthic Diseases Laboratory, attended the IIIth Annual Meeting of the American Association of Veterinary Parasitologists in Denver, Colorado. The program involved research reports on practical aspects of veterinary parasitology and included a symposium on "Important problems toward which research in veterinary parasitology should be directed." He presented a paper entitled "Anthelmintic activity of oxibendazole against equine parasites."

Parasitologists Meet - Dr. Frank Stringfellow, Ruminant Helminthic Diseases Laboratory, attended the 49th Annual Meeting of the American Society of Parasitologists in Kansas City, Missouri, and presented a paper entitled "Enzymic histochemistry of bovine abomasal tissue infected with Ostertagia ostertagi with analysis of gastric juice."

Honors and Awards

Scientific Advisory Council - Dr. Robert E. Hardenburg, Chief, Horticultural Crops Marketing Laboratory, has accepted the invitation of the Board of Governors of the Refrigeration Research Foundation to serve on its Scientific Advisory Council for a 3-year term. A major objective of the Foundation is "to improve methods of refrigeration for the better preservation of food and other commodities essential to the health and welfare of the American people."

Environmental Quality Research Award - Dr. C. D. Foy, Plant Stress Laboratory, received the American Society of Horticultural Science Environmental Quality Research Award for a paper entitled "Differential Effects of Aluminum on the Vegetative Growth of Tomato Cultivars in Acid Soil and Nutrient Solution." Other authors and joint recipients were Drs. G. C. Gerloff and W. H. Gabelman, Department of Horticulture, University of Wisconsin.

\$60,000 Grant - Dr. W. R. Nickle, Nematology Laboratory, has received a \$60,000 three-year grant to do a pilot project on Suppression of Mosquitoes Using Mermithid Nematodes. This is part of the ARS effort in the area of Alternative Methods of Pest Control. Bob Bellinger has joined Pat Pilitt as Dr. Nickle's support personnel in the mass rearing and field release of these parasites.

Quality Within-Grade Increases

R. M. Chiddo, Food Distribution Research Laboratory, for sustained superior performance of secretarial skills and for personal initiative that have contributed substantially to the overall efficiency and effectiveness of the Laboratory.

C. C. McKnew, Applied Plant Pathology Laboratory, has not only met or exceeded the standards for major duties, but has done so for all other standards for his job during this period. It is likely that this high quality performance will continue.

N. L. Johnson, Food Distribution Research Laboratory, for sustained superior performance of secretarial skills and for personal initiative that have contributed substantially to the overall efficiency and effectiveness of the Laboratory.

Sustained Superior Performance with Cash Award

L. M. Walton, Animal Improvement Programs Laboratory, for performing duties in an outstanding manner, far exceeding those expected. His work is of excellent quality. In performing his duties, he has to use his training and past experiences in handling computer tasks.

Cooperative Activities

Baltimore Regional Wholesale Food Distribution Facilities - Food Distribution Laboratory conducted research which led to development. Governor Marvin Mandel has announced the contract for construction of the Maryland Produce Market. Twenty-nine Baltimore produce merchants have signed leases to occupy 71 units in the new 72-unit facility. This new 38-acre market will become part of the larger Maryland Wholesale Food Center which occupies a 398 acre site on Route 1 between Baltimore and Washington, at Jessup, Maryland.

Chaired Committee on Growth Chamber Environments - Dr. D. T. Krizek, Plant Stress Laboratory, chaired an all-day meeting of the American Society for Horticultural Sciences (ASHS) Special Committee on Growth Chamber Environments at the joint American and Canadian Horticultural Sciences Meetings at the University of Guelph, Guelph, Ontario, Canada, and presented a joint paper with Mr. Peter Semeniuk, Ornamentals Laboratory, on Department of Transportation-sponsored research, entitled "Influence of Ultraviolet Radiation on the Growth and Development of Browallia speciosa Hook."

Foreign Scientist - Dr. Gunter E. Retzlaff of Badische Anilin-Soda Fabrik (BASF) West Germany, will be working for 10 weeks with Dr. J. L. Hilton of the Pesticide Action Laboratory. They will be working on the mode of action of bentazon.

EPA Label Approval Obtained - Mr. M. S. Schechter, Chief, Chemical & Biophysical Control Laboratory, was advised by S. B. Penick and Co., of EPA label approval for 2% Resmethrin Aerosol. This aerosol formulation represents a marked advance in aircraft disinsection. The Armed Services and APHIS are ordering quantities for general quarantine purposes and public health protection.

Western Regional Project W-102 - Drs. F. G. Tromba, Non-Ruminant Helminthic Diseases Laboratory, and H. Herlich, Ruminant Helminthic Diseases Laboratory, attended the annual meeting of the Technical Committee of the Western Regional Project W-102 at Pullman, Washington. The major concern of the group is the Biological Control of Parasites of Domestic Animals.

Visitors

South Carolina - Harris Barnes, Editor, Southeast Farm Press, Columbia, South Carolina, recently visited BARC to get a "broad-brush" picture story of our plant research work for his magazine which goes to 50,000 growers in the 11 Southeastern States. Thirteen staff members of AEQI, PPHI, and PGGI discussed our research with him.

Philippines - Dr. Rhodora S. Carlos, Manila, Philippines, and Dr. Enrique R. Carlos, Mendham, New Jersey, Veterinarians, visited the Parasitology Institute to discuss parasitological problems and programs with the Chairman and personnel in the various laboratories.

Washington, D.C. - Mrs. Grace Faye, Mechanical Engineer, Office of the Associate Administrator for Research, Development, and Demonstration, Federal Railroad Administration, U.S. Department, Washington, D. C. visited the Transportation & Packaging Research Laboratory, to discuss planned joint research on the effect of shock and vibration in railroad piggyback transportation on perishable and fragile agricultural products with W. A. Bailey and P. L. Breakiron.

Australia - Dr. Mark Hutton, Chief, CSIRO Cunningham Laboratory, Division of Tropical Research in Australia, visited with Dr. Deane Weber, Plant Nutrition Laboratory, in regard to persistence of rhizobia in soil.

Illinois - Dr. Richard L. Bernard, U.S. Regional Soybean Research Laboratory, Urbana, Illinois, and Dr. Marcus Kogun, Entomologist, University of Illinois, visited the research of entomologist Tom Elden, Field Crops Laboratory. This tour of Mr. Elden's research on Mexican bean beetle resistance in soybeans, at Beltsville, Queenstown, Snowhill, and Poplar Hill, was made by Drs. Bernard and Rogun; Ratcliffe, Devine and Leffell of BARC; and Paz of the University of Maryland.

New York - Mr. Charles W. Ebeling, Technical Services Manager, General Foods Corporation, White Plains, visited the Transportation and Packaging Research Laboratory, to discuss the application of containerized storage, transportation and handling to the physical distribution of dry groceries and manufactured food products with D. R. Stokes and P. L. Breakiron.

Gambia - Dr. Marenh, Director of Agriculture for Gambia, consulted with Dr. R. C. Leffel, Chief, Plant Nutrition Laboratory, on soybeans and soybean inoculation, on August 7.

Israel - The Pesticide Action Laboratory recently hosted a Weed Field Day. Final count of registered visitors was 53. Among the distinguished guests was Gideon Cohen, Israeli Embassy. Thirty-eight plots testing 38 different herbicides, manufactured by 13 different companies, applied as either preemergence, postemergence, or soil incorporation, involving four legumes, 14 crops, and 15 weeds, were on display to visitors.

India - Dr. Raj Bahadur, Mississippi Valley State University, Itter Bena, visited with Dr. Deane Weber, Plant Nutrition Laboratory, on August 13.

New York - Dr. Tom Sinclair, ARS, Ithaca, New York, visited the Plant Nutrition Laboratory on August 6, 1974. He is especially interested in research on nitrogen fixation. Dr. Sinclair was a student summer employee here at BARC about 10 years ago.

Multi-State - The Systematic Entomology Laboratory has several visitors who consulted with Laboratory specialists and studied the National Collection of Insects. Among them were Dr. Richard F. Darsie, National Communicable Disease Center, Atlanta, Georgia; Dr. Donald W. Webb, Illinois Natural History Survey, Urbana, Illinois; and Mr. Gary Coovert, Dayton Museum of Natural History, Dayton, Ohio.

Michigan - Mr. Lawrence Kieft, Atco Rubber Company, Grand Haven, Michigan, visited the Transportation and Packaging Research Laboratory, to discuss the application of corrugated polyethylene box board to the packaging of fresh fruits and vegetables with D. R. Stokes.

Washington - Mr. Fred G. Burrows, Manager of Marketing Services, International Apple Institute, Washington, visited the Transportation and Packaging Research Laboratory, to discuss standardization of apple shipping containers with D. R. Stokes.

Ireland - Dr. Thomas Walsh, Director of the Agricultural Institute of Ireland, consulted with the Plant Nutrition Laboratory staff on soil and plant nitrogen research.

New York - Mr. Herman Soder, Corporate Manager - Special Equipment, United States Lines, New York, visited the Transportation and Packaging Research Laboratory, to discuss the approval of coating on carcass meat hooks in refrigerated van containers with P. L. Breakiron.

Biographical Sketches

Dr. Walter Mertz was born in Germany. During his study at the University of Mainz Medical School, he became interested in nutritional problems related to chronic diseases and worked as a research assistant for Dr. K. Schwarz on an unidentified dietary agent, which was identified as the essential element selenium 10 years later. He received his degree as a

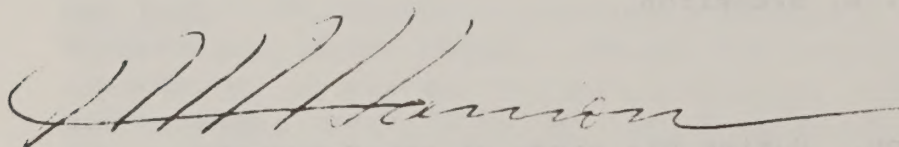
Doctor of Medicine in 1951 and, after working as an Intern at hospitals in Germany, came to the National Institute of Health in 1953, as a research fellow. In collaboration with K. Schwarz he discovered an unidentified dietary agent, glucose tolerance factor. This factor was shown to contain the essential trace element chromium, as required for normal glucose metabolism in animals and man -- and subsequent studies demonstrated deficiencies in various population groups, here and abroad. Dr. Mertz has continued this line of work, which has resulted in the tentative identification of glucose tolerance factor as a chromium - nicotinic acid complex.

In 1961 Dr. Mertz transferred to the Walter Reed Army Institute of Research and became Chief of the Department of Biological Chemistry. In 1969 he moved to the Human Nutrition Research Division at Beltsville as Chief of the Vitamin and Mineral Nutrition Laboratory, and with the reorganization in 1972 was appointed Chairman of the Nutrition Institute. His main interest remains with problems of trace element nutrition in general and of chromium in particular.

Dr. John G. Moseman was born in Nebraska and received his B.S. from the University of Nebraska in 1943, his M.S. from Washington State University in 1948, and his Ph.D. in plant breeding and plant pathology from Iowa State University in 1950.

He joined ARS, Cereal Crops and Diseases Branch, in 1950 as a plant pathologist located at North Carolina State University. In 1954 he was transferred to Beltsville and became project leader for barley diseases in the Barley Investigations. In 1969 he was appointed Leader, Barley Investigations. Concurrent with the reorganization in 1972 he became Chairman, Plant Genetics and Germplasm Institute.

His personal research has primarily involved the interactions between barley and the powdery mildew pathogen. He has also studied virus and other fungal diseases of small grains. His training in genetics, cytogenetics, and pathology has enabled him to participate either as the plant breeder or pathologist in cooperative barley improvement projects with other scientists. He has presented invited papers on his research at international meetings and is on several international committees. His present research is on coevolution of hosts and pathogens, and germplasm collection, evaluation, maintenance, and utilization for variety development.



A. A. Hanson, Director
Beltsville Agricultural Research Center

UNITED STATES DEPARTMENT OF AGRICULTURE
AGRICULTURAL RESEARCH SERVICE

NORTHEASTERN REGION

AGRICULTURAL RESEARCH CENTER

BELTSVILLE, MARYLAND 20705

NOTES FROM THE DIRECTOR

No. 37.

October 3, 1974

Employee Activities

Research Survey Appointment - Dr. A. W. Taylor, Chief, Agricultural Chemicals Management Laboratory, has been temporarily assigned to the National Program Staff for the period from August 20 to November 15 to conduct a survey of the future needs in research in soil fertility and plant nutrition in the Southern Region and will present a report on the needs and the adequacy of the present ARS program to Dr. A. W. Cooper. Mr. J. H. Caro will act as a Laboratory Chief during Dr. Taylor's assignment.

New Dairy Products Processing Plant to Result From Study - Charles F. Stewart, Dairy & Poultry Products Marketing Laboratory, completed an in-depth study of a Cooperative dairy products processing plant in Richmond, Indiana. Because of increased growth, lack of space for expansion, high operating costs, and the likelihood of the facilities being removed by urban redevelopment, it was determined that new facilities would be needed to meet future growth. Layouts for the new facilities were developed and initial investment costs, labor requirements, and potential benefits determined. The study showed that in a new plant, the annual operating costs could be reduced by 21 percent in processing and handling the present volume, and 36 percent if the volume was increased by 50 percent. The site for the new plant has been purchased and construction is scheduled to begin soon.

Working Group Appointment - J. H. Caro, Agricultural Chemicals Management Laboratory, has been appointed by Dr. McCracken to an ARS working group charged with the development of a guide on methods and practices for controlling water pollution from nonpoint agricultural sources. The final report of this group must be presented to EPA, the requesting agency, by July 1, 1975.

International Assignment - Heggie N. Holtan, Chief, Hydrograph Laboratory, spent three weeks in Paris, France, under an assignment for the United Nations Educational, Scientific and Cultural Organization (UNESCO). Mr. Holtan, Mr. Vsevolod V. Kuprianov, Deputy Director, State Hydrological Institute, Leningrad, USSR, and Mr. Cornelis Toebes, Engineering Consultant, Ministry of Works, Wellington, New Zealand, are to edit a world case book of practical applications of experimental watershed data toward the solution of problems. More than a hundred countries now have representative and experimental watersheds as a result of the International Hydrologic Decade (IHD) ending this December 31. The ongoing program will be known as the International Hydrologic Program and is not terminal. Emphasis during the decade was placed on data collection. Mr. Holtan stayed on as an observer at the Executive Council meetings and attended the "Tercentenary of Scientific Hydrology" symposium terminating the decade. Three weeks in session proved the old adage, "The top can absorb only as much as the bottom can stand."

Weed Control Reported - Newsweek magazine reported recently on the successful control of alligatorweed in the southeastern States by the flea beetle, Agasicles hygrophila, which was introduced from South America in 1964. The initial search for and discovery of the flea beetle was made by George B. Vogt, formerly of the Systematic Entomology Laboratory. (Mr. Vogt is now at the Southern Weed Sciences Laboratory, Stoneville, Mississippi.)

Foreign Travel - Dr. Robert F. W. Schroder, Research Entomologist, Beneficial Insect Introduction Laboratory, traveled to El Salvador, July 13-20, to collect beneficial insects for introduction into the United States. Dr. Schroder's main target was a new species of a mite predator of the Mexican bean beetle. As a result of his trip, a culture of this mite is now in quarantine at the ARS Beneficial Insects Research Laboratory, Newark, Delaware, where it is being tested to determine whether it will attack beneficial species of ladybugs. The description of the new species of mite, by Robert L. Smiley, Systematic Entomology Laboratory, is in manuscript.

Nutrition Seminar - Dr. Robert D. Reynolds of the Department of Biochemistry, University of Wisconsin, recently presented a seminar entitled "Irreversible Inactivation of Rat Liver Tyrosine Aminotransferase" to the Nutrition Institute. In his talk, Dr. Reynolds outlined a novel approach which he discovered himself to the problem of turnover of proteins which depend upon water-soluble vitamins for their enzymatic activity. This new technique offers promising leads to the solution of the general problem of assessing nutritional status of individuals.

New Employees - Two new employees joined the Beneficial Insect Introduction Laboratory staff in September. Mrs. Pattye A. Kessler transferred from the ARS Management Improvement Staff in connection with the USDA Upward Mobility Program on September 1. Mrs. Kessler will be receiving training at Prince Georges Community College and Maryland University in preparation for her targeted position as Entomologist. She will serve as a Research Assistant to the Laboratory Chief, BIIL.

Mrs. Suzanne W. T. Batra joined BIIL on September 15. Dr. Batra has had a 10 year research career in entomology, including positions at the University of Kansas, Utah State University, and Punjab Agricultural University in India. She has authored or co-authored over 32 publications, and has achieved international recognition as an authority in insect ecology. Her duties will involve establishment of a biological control of weeds program in the NER. With her extensive knowledge of the taxonomy of bees, Mrs. Batra will also assist the Systematic Entomology Laboratory's service identification functions.

168th American Chemical Society National Meeting - Three members of the Insect Chemosterilants Laboratory presented papers at the Fall ACS Meeting in Atlantic City. Dr. A. B. Borkovec gave an invitational paper on The Chemosterilization of the Boll Weevil in the Division of Pesticide Chemistry. Mr. A. B. DeMilo and Dr. J. E. Oliver talked on The Synthesis of Styrenesulfonamides in the Division of Organic Chemistry. Dr. Oliver was a coauthor with P. E. Sonnet of another paper entitled "Synthesis of Trail Pheromone of the Pharaoh Ant."

Information Retrieval Meeting - Dr. Richard H. Foote, Chief, Systematic Entomology Laboratory, met in August with representatives of the University of Wisconsin and the Entomological Society of America at BIOSIS of Biological Abstracts in Philadelphia. Arrangements were made for an experiment in indexing to improve the retrieval of entomological information from BA.

International Planning Meeting - Dr. Charles D. Foy of the Plant Stress Laboratory attended an invitational international planning conference held at the Fertilizer Development Center in Muscle Shoals, Alabama, on August 17-29, 1974. The subject of the conference was "Tailoring Fertilizers for the Tropics."

Task Force Consultant - Dr. R. G. Orellana, Applied Plant Pathology Laboratory, was invited to serve as consultant to the Gums and Industrial Crops Committee of the Southern Regional Task Force on Industrial Crops and Minor Oilseeds. The Task Force will determine research needs, review current research, assess immediate and long-term problems, and determine priorities. The Task Force will submit a report to the Research Planning Group of ARS.

Entomologists Confer - George Steyskal, Systematic Entomology Laboratory, conferred in June with specialists at the California Academy of Sciences, San Francisco, and the Biological Control of Weeds Laboratory, Albany, California, and in August visited the Biosystematic Research Institute, Agriculture Canada, Ottawa, to conduct taxonomic studies of flies in the Canadian National Collection.

Regional Vice Chairman Chosen - The Horticultural Engineering Commission of the International Society has chosen William A. Bailey, Transportation & Packaging Research Laboratory, to serve as the Regional Vice Chairman for North and South America. The Commission has two other Vice Chairmen; one to cover the European area and the other to cover Southern Asia, including Australia and New Zealand.

Honors and Awards

Cash Awards

Jane D. Rayburn, Animal Parasitology Institute, for independently organizing and carrying through the indexing of medical parasitological literature at the National Library of Medicine for the Index-Catalogue of Medical & Veterinary Zoology, greatly reducing a backlog of work, and for solving difficult problems of multilingual drug nomenclature in the editing of the Treatment Section of the Index-Catalogue.

Martha W. Hood, Animal Parasitology Institute, for improving and outstanding editing of the Subject Heading section of the Index-Catalogue of Medical and Veterinary Zoology as a useful key to research literature in parasitology, and for major contributions to the preparation and review of all sections of this publication.

Shirley J. Edwards, Animal Parasitology Institute, for constant efforts and suggestions for efficiently organizing the work of the Index-Catalogue of Medical and Veterinary Zoology so that overall production in the project has resulted in a high number of publications in the past year with no decrease in the amount of current work produced.

William H. Heartley, Jr., Plant Stress Laboratory, PPhI, for contribution to the public image of the Beltsville Agricultural Research Center and the U.S. Department of Agriculture.

Quality Within-Grade Increases

Joel Rosen, Insect Pathology Laboratory

Barbara A. Bierl, Organic Chemical Synthesis Laboratory

Invited Papers

"Introduction, Transportation, and Fate of Persistent Pesticides in the Atmosphere," was the title of a paper by D. E. Glotfelty and J. H. Caro, Agricultural Chemicals Management Laboratory, presented by invitation by Mr. Glotfelty at the National Meeting of the American Chemical Society in Atlantic City, New Jersey, on September 11. The paper was part of a symposium, "Removal of Trace Contaminants from the Air," jointly sponsored by the Divisions of Colloid and Surface Chemistry and Environmental Chemistry.

"Nutrition of the Honey Bee" was the title of an invitational paper delivered by Mr. Elton W. Herbert, Bioenvironmental Bee Laboratory, at the annual meeting of the Professional Apicultural Society at the University of Guelph, Canada. Mr. Thor Lennert, in his capacity as President of the Professional Apiculturists Society, chaired the annual meeting.

"The Need to Evaluate and Improve Food Service Productivity" was the title of a paper presented by John F. Freshwater, Food Distribution Research Laboratory, at a seminar on the Effective Use of Personnel in Food Service Operations. The seminar was sponsored by the University of Massachusetts at Waltham on September 11.

XIX International Horticultural Congress - Dr. Donald T. Krizek, Plant Stress Laboratory, presented an invitational paper entitled "Maximizing Plant Growth in Controlled Environments" at the XIX International Horticultural Congress which was held in Warsaw, Poland, September 10-18. He also chaired a session on "Phytotrons in Horticultural Research" and presented a paper on NSF funded Base-Line Growth Data under the auspices of the ASHA Special Committee on Growth Chamber Environments. He also visited a number of laboratories and environmental facilities while in Poland.

Cooperative Activities

The Federal Prison System Seeks Aid - The Livestock and Meat Marketing Laboratory is presently aiding the Justice Department's Bureau of Federal Prisons in planning a pilot meat fabricating facility at Leavenworth, Kansas. Officials of the Federal Prison System are interested in providing inmates with job training opportunities related to the meat industry, in finding ways to reduce the Federal Prison System's red meat procurement costs and improving the quality of meat provided to the inmates. The initial pilot project at Leavenworth is being planned to handle inmate meat consumption requirements for the Springfield and Denver Federal prisons as well as the Leavenworth Institution. Red meat consumption for these three installations are estimated at more than 418 tons annually. Mr. H. R. Smalley, Livestock and Meat Marketing Laboratory, is cooperating with Mr. Jim Carter of the Justice Department on

this project. Should the program prove successful, other fabricating facilities will be planned and implemented throughout the entire Federal Prison System.

Congressional Reception - The Bioenvironmental Bee Laboratory participated in the 1974 American Honey Producers reception for members of Congress and their staffs by supplying demonstrations of artificial insemination of honey bees, use of bees for crop pollination, observation hives, and slide and movie presentations of research. The manipulation of a colony of bees in a caged enclosure in the Rayburn building evoked much interest and comment. Television and press coverage by local newscasters was more than adequate.

US-USSR Cooperation - Cooperation between Dr. Curtis Sabrosky, Systematic Entomology Laboratory, and Dr. L. Fedoseeva of the State University of Moscow has resulted in a major advance in our knowledge of flies of the genus Meromyza, the wheat stem maggots. Dr. Fedoseeva, a noted specialist in this group, found a total of 20 species in North American material, including 13 new to science and 4 Palaearctic species recognized from Alaska and the northwestern United States. Exchange of identified material added representatives of 17 European species to the U.S. National Collection, providing an excellent reference collection from the North Temperate Region.

Cricket Farming in Tennessee - Recently, Dr. A. M. Heimpel, Chief of the Insect Pathology Laboratory, was called upon by two cricket farmers in Tennessee to help them solve problems that appeared to be infectious disease in their rearings. The crickets are reared year-round in some cases in special laboratories and are sold as fish bait in the southern states. This is a considerable business in Tennessee and a large well appointed laboratory can turn out \$25,000 to \$30,000 worth of crickets a year. After visiting two cricket farms and investigating the condition of the insects, Dr. Heimpel managed to correct the condition at one of these farms by altering the diet used and apparently the rearings are back in shape. This appeared to be a nutritional condition. However, in the other farm a mixture of nutritional problems and diseases apparently caused by a very small yeast that multiplied enormously in the gut of the animals, seemed to be the case. It has not been possible yet to correct the condition, but antibiotics are being tried and apparently there is some recovery of the rearings. Attempts to help the cricket farmers with their problems are continuing.

PL-480 Project Review - In September, Dr. Donald T. Krizek, Plant Stress Laboratory, reviewed three PL-480 projects in Poland for the International Programs Division. These included a project of Dr. Alina-Kacperska Palacz, University of Warsaw, on "Growth and metabolic changes during acclimation of plants to frost and drought" sponsored by Dr. M. N. Christiansen and Dr. W. Krul, Plant Physiology Institute; one of Dr. Henryk Skapski, Warsaw Agricultural University, on "The long-term effect of herbicides on yield and quality of vegetable crops, weed population, and some soil properties" for Dr. Raymond B. Taylorson, Agricultural Environmental Quality Institute; and one of Dr. Adam Markowski, Institute of Plant Physiology, Krakow, on "Effects of gaseous air pollutants on water economy and productivity of cultivated plants" for Dr. H. E. Heggestad, Agricultural Environmental Quality Institute.

Disinsection Treatments of Large Military Aircraft - W. N. Sullivan, Chemical and Biophysical Control Laboratory, received complaints from the Air Force regarding the fact that C5A and similar aircraft were being held on the ground

too long in compliance with APHIS DDT-carbaryl dust treatments during the Japanese Beetle season. Due to the extremely large size of the C5A, several treatments are necessary to provide complete coverage. M. S. Schechter and Mr. Sullivan arranged with APHIS to try their new large capacity double-nozzle dust gun. It was found that two "shots" from that gun filled the cargo compartment in a matter of seconds with excellent distribution. The regular gun could be used satisfactorily for the upper passenger compartment. Two of the double-nozzle dust guns were left with Mr. Overmiller of APHIS for his further evaluation and suggestions.

Putting Research to Work

Wyerhauser Company reproduces ARS publications - The Wyerhauser Company's Corrugated SHipping Container Division conducted a seminar, entitled "Citrus Packaging and Handling: 1974", designed to give industry representatives a current picture of various aspects of citrus packaging and handling. A handbook was published and distributed that presented current information on areas of importance to Wyerhauser and to the citrus industry. One of the areas covered was unitization. The unitization section of the handbook was composed of reproductions of two ARS publications (ARS 52-43, 52-53, and one article written by ARS scientists in the 1971 United Fresh Fruit & Vegetable Association's Yearbook). These publications cover an evaluation of disposable pallets, a cost analysis of various types of unitized and nonunitized loading and a comparison of unitized shipping of various fresh fruit and vegetables.

Biographical Sketch

Dr. James W. Smith, Chairman, Animal Physiology and Genetics Institute, was born in Marion, Louisiana, and received his B.S. and M.S. degrees from Louisiana State University and his Ph.D degree in Animal Breeding from North Carolina State College in 1962. He served as Research Instructor in the Animal Breeding Section at North Carolina State College from 1960 to 1962.

He joined ARS as a Research Dairy Husbandman, Dairy Cattle Research Branch, in 1962. In 1969 he became Leader of the Genetics and Management Investigations of the Dairy Cattle Research Branch. Concurrent with the reorganization he became Chairman of the Animal Physiology and Genetics Institute, BARC.

His personal research with dairy cattle involved breeding, dairy management, and methods to reduce mastitis losses. Dr. Smith's research is reported in over 50 technical articles. In 1969-70 he served as Vice President and President of the National Mastitis Council. He served as Secretary of NC-2 Regional Dairy Cattle Breeding Committee from 1969-71. From 1966-73 he was Chairman of the Technical Committee on Testing, Weighing, and Sampling Devices, NDHIA Coordinating Group. He is currently serving as Chairman of the National Mastitis Council Research Committee.

A. A. Hanson

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Beltsville Agricultural Research Center

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NOTES FROM THE DIRECTOR

No. 38

October 17, 1974

Employee Activities

Shell Egg Marketing Seminar - Jesse W. Goble, Acting Chief, Dairy and Poultry Products Marketing Laboratory, presented a paper on "Improving Shell Egg Packing Plants," at the seminar held at Albert Lee, Minnesota, jointly sponsored by the University of Minnesota, Iowa State University, and four trade associations.

Specimen Exchange - Mr. T. J. Spilman, Systematic Entomology Laboratory, has completed an exchange of 2,500 specimens of U.S. Cerambycidae, or long-horned beetles, for a similar number of Japanese specimens with Shigeru Eda, First Secretary of Labor, Embassy of Japan, Washington, D.C., who is an avid amateur collector. This acquisition will enable SEL coleopterists to make accurate identifications of the species of this important family of woodborers that are frequently intercepted at ports of entry in wood products from Japan.

National Association of Swine Testing Stations - Dr. Ben Bereskin, Genetics and Management Laboratory, was an invited participant in the meeting, held at Austin, Minnesota, directed toward establishing a National program for central swine testing stations in the U.S.

Eleventh Plenary Meeting, ISO Technical Committee 81 - Common Names for Pesticides - Dr. D. L. Klingman, Chief, Field Crops Laboratory, and Mrs. E. M. Osborne, Head, Chemicals Coordination Unit, represented the American National Standards Institute and USDA at the meeting held in London, England. The agenda included the conversion of approximately 375 common names from International Recommendations to International Standards. The names will be published in English, French, and Russian for use in international publications and contribute to the establishment of National Standard common names.

Entomological Society of America, Eastern Branch - "Users of Taxonomic Research and Services" and "Continental Drift: Its Meaning for Biogeography and Insect Biogeographers" were the subjects of symposia organized by L. Knutson and F. C. Thompson, IIBIII, for the Entomological Society of America Eastern Branch Meeting at Hershey, Pennsylvania, on September 25-27.

New Britannica Edition - The 15th Edition of the Encyclopaedia Britannica, 1974, includes a 9-page discussion of Orthoptera and closely related insect orders, under the generalized common name "Orthopteran," written by Dr. Ashley B. Gurney, Systematic Entomology Laboratory. In this new edition, the Britannica editors have attempted to present fuller and more detailed articles on the principal groups of insects than in previous editions, and they invited Dr. Gurney, who has studied the grasshoppers,

crickets, cockroaches, and related insects for USDA since 1936, to contribute. The article is a general introduction to the biology, importance, and classification of those insects from a worldwide point of view.

U.S. Patent 3,761,584 - The development of the Japanese beetle synthetic attractant, phenethyl propionate-eugenol, by ARS scientists dates back to 1970 [J. Econ. Entomol. 63, 1727-29 (1970) by T. P. McGovern, M. Beroza, T. L. Ladd, Jr., J. C. Ingangi, and J. P. Jurimas]. The superiority of the attractant over previous lures was immediately apparent, and it was quickly adopted for use by APHIS in their national monitoring program and by Ellisco Inc., a firm that sells Japanese beetle traps to USDA and the general public. U.S. Patent 3,761,584 entitled "Phenethyl Propionate and Eugenol, a Potent Attractant for the Japanese Beetle (Popillia japonica Newman)" was issued to T. P. McGovern, M. Beroza, and T. L. Ladd on September 25, 1973. According to Mr. C. B. Sifton, Jr., manager of Ellisco, Inc., the company's entire production of traps for three consecutive years has been sold out. Mr. Sifton credits the new lure for making the traps highly effective and therefore very much in demand.

Fourth International Congress of Acarology - Robert L. Smiley, Systematic Entomology Laboratory, attended the Fourth International Congress of Acarology held at Saalfelden, Austria, August 12-19, and presented a paper entitled "Eutogenes vicinus Summers & Price, a polymorphic and predacious species of cheyletid mite (Cheyletidae)." He also conducted research on plant feeding mites at the British Museum (Natural History), London, and at the Rijksmuseum van Natuurlijke Historie, Leiden, Netherlands.

Invited Papers

Richard H. Foote, Chief, Systematic Entomology Laboratory, was asked to present the principal talk to the October meeting of the Helminthological Society of Washington at College Park. The meeting honored L. E. Rozeboom, retiring professor of medical entomology, the Johns Hopkins School of Hygiene and Public Health, Baltimore. Dr. Foote related progress being made by ARS on a computerized catalog of insects and the relationship of that catalog to a potential world-wide biological information system.

Stonefly Symposium - The Fifth International Symposium on Plecoptera (stoneflies), sponsored by the Smithsonian Institution, was held in Washington, D.C., September 3-6. Two specialists of the Systematic Entomology Laboratory presented invitational talks: Curtis W. Sabrosky spoke on "Basic principles and practices in zoological nomenclature" and George C. Steyskal addressed the meeting on "Notes on nomenclature and taxonomic growth of the Plecoptera."

Quality Within-Grade Increases

C. A. McDaniel, Animal Improvement Programs Laboratory, for displaying a high degree of dedication and thoroughness in operating computer terminal.

K. L. McCue, Insect Pathology Laboratory, for at least double the expected performance as a Clerk-Stenographer.

Cash Awards

L. Mathews, Division of Operations, for outstanding performance in assigned duties and in supervision of custodial activities.

J. S. Sigler, Office of the Chairman, APGI, for taking responsibility for performing duties normally assigned to a Veterinarian.

H. D. Thomas, Ornamentals Laboratory, for producing seedlings and conducting a breeding program beyond normal requirements.

Cooperative Activities

Insect Research - In consultation with Dr. A. S. Menke, Systematic Entomology Laboratory, Dr. W. J. Pulawski of the Zoological Institute, Wroclaw, Poland, is conducting taxonomic research on the North American wasp genus Tachysphex at the National Museum with the support of a Smithsonian Institution postdoctoral grant. During his year in the United States Dr. Pulawski will be working with Dr. Menke and during the summer of 1975 Dr. Menke will accompany Dr. Pulawski on a trip to museums in the western United States, during which collections of Tachysphex will be made.

Visitors

Poland - Dr. Adam Niewiarowicz, Institute of Animal Products Technology, Agricultural Academy of Poznan, Poland, visited the Livestock and Meat Marketing Laboratory to discuss current developments in meat research and to discuss the possibility of initiating new PL 480 studies. Particular attention was devoted to the problem area of rheological properties of meat and bone as they related to: (a) animal maturity, (b) initiation and resolution of rigor mortis, (c) muscle and bone composition and (d) palatability traits.

Spain - A party of 20 Spanish journalists accompanied by three representatives from John Deere Company, visited the Plant Nutrition Laboratory staff, and were lectured on soybeans and n-fixation. The group also met with Dr. R. H. Miller and Dr. P. D. Thompson, Genetics and Management Laboratory, to discuss the work of the Laboratory.

Kenya - Dr. Isaac K. Kigatiira of Nariobi, Kenya, visited with A. S. Michael and H. Shimanuki of the Bioenvironmental Bee Laboratory. Dr. Kigatiira is presently doing post graduate work at the University of Guelph, Canada.

Russia - A group of Soviet scientists, accompanied by Dr. Ivan A. Gavva, Agricultural Counselor, Embassy of the USSR, visited with Dr. Weber, Plant Nutrition Laboratory, to discuss soybean-Rhizobium research.

Brazil - Dr. L. S. Goncalves of the Department de Genetica, Faculty Medicina, Ribeiro Preto, Brazil, visited the Bioenvironmental Bee Laboratory to discuss bee disease problems and aspects of the African bee problem.

Sri Lanka - Mr. Wickrananayaka, Minister of Justice, Sri Lanka, (formerly known as Ceylon) visited Dr. Devine, Plant Nutrition Laboratory, to discuss soybean production, evolution and symbiotic nitrogen fixation.

England - Mr. Martin Shearn of the National Institute for Research in Dairying, Reading, England, visited Dr. Paul Thompson of the Genetics and Management Laboratory. During the visit, Mr. Shearn and Dr. Thompson exchanged ideas concerning mastitis research being conducted at both research centers. Mr. Shearn is visiting in the U.S. under a Winston Churchill Fellowship.

Poland - Dr. S. K. Wiackowski of the Forest Research Institute, Krakow, Poland, visited with Jack R. Coulson, Chief, Beneficial Insect Introduction Laboratory and Dr. John J. Drea, Leader, European Parasite Laboratory. Discussions included possible development of a PL 480 project on natural enemies of the gypsy moth and other lepidopterous forest defoliators in Poland, and cooperation arrangements for EPL field work in Poland in 1975 on gypsy moth.

Colombia - Mr. L. A. Garcia of Caldas, Colombia, S. A., visited the Bioenvironmental Bee Laboratory to discuss phases of the African bee problem and to obtain information on bee disease control techniques.

West Germany - Dr. Werner Hartmann, Institute for Kleintierzucht, West Germany, visited Dr. R. H. Miller and Dr. Ben Bereskin of the Genetics and Management Laboratory. During Dr. Hartmann's visit, topics of mutual interest in animal breeding research were discussed.

Japan - Mr. Shigeju Kutsuna, Japanese Ministry of International Trade and Industry, led a delegation of six researchers from The Distribution Systems Research Institute on a visit to BARC. They met with Dr. H. S. Ricker, Food Distribution Research Laboratory, to discuss ARS's role in the development of the electronic checkout system for retail food stores, and recent developments and problems associated with adoption of the Universal Product Code. They are developing plans and policies for the adoption of similar systems in Japan.

Hawaii - Dr. Chang of East West Center, Hawaii, visited with Dr. Devine of the Plant Nutrition Laboratory to discuss breeding for insect resistance.

China - A party of 10 scientists from the Republic of China Delegation visited the Plant Nutrition Laboratory to discuss soybean research and n-fixation.

South Africa - Mr. B. P. Van Niekerk, Extension Officer for Drakensberg, Agricultural Cooperative Society, Republic of South Africa, visited the Plant Nutrition Laboratory to discuss soybean production and nitrogen fertilization of crop plants.

France - Dr. John J. Drea, Leader of ARS' European Parasite Laboratory (EPL) visited with Jack R. Coulson, Chief, Beneficial Insect Introduction Laboratory, and Technical Advisor for the EPL Program. Informal discussions were held with NPS specialists, IPD officials, and other researchers at BARC, the Beneficial Insects Research Laboratory, Newark, Delaware, New Jersey Department of Agriculture, and Pennsylvania Department of Environmental Resources. These discussions will result in some changes in the EPL research program direction and close coordination with the domestic research in ARS' beneficial insect importation programs.

England - Dr. Fiona Stanley from the British Medical Research Council, and the London School of Hygiene and Tropical Medicine, visited the Nutrition Institute and presented a seminar "Some aspects of trace elements and cardiovascular disease." Dr. Stanley is a member of the team that did pioneering research on the relation of water quality and various aspects of cardiovascular disease.

Australia - Dr. A. P. Goodman of Lane, Ltd., Sydney, Australia, visited with Dr. K. C. Kates and Mr. M. L. Colglazier of the Animal Parasitology Institute to discuss chemotherapeutic control of helminth parasites of domestic animals, particularly ruminants.

Germany - Professor Konrad Lang from Mainz, Germany, presented the Nutrition Institute with the results of several years of studies in which he assessed effects of feeding oils previously used for deep frying. The conclusion of his careful study was that the practice of deep frying as it is used in the home has no deleterious effects.

France - Dr. Blanchet, Director of Research, INRA, National Institute of Agronomic Research, Paris, France, visited with the Plant Nutrition Institute staff and consulted with them on soybean production and on soybean host-Rhizobium strain relationships.

New York - Professor Hans Kaunitz of Columbia University visited the Nutrition Institute and demonstrated to them that urinary tract stone formation is influenced not only by the mineral composition of the diet, but very importantly, by the quality of the dietary fat and protein components.

Germany - Dr. H. Beisbarth from Erlangen, Germany, gave a seminar to the Nutrition Institute and discussed the indications and counter-indications for the use of intravenous fat emulsions and presented important new data on the effect of cerebral trauma on fatty acid concentrations in serum.

Biographical Sketches

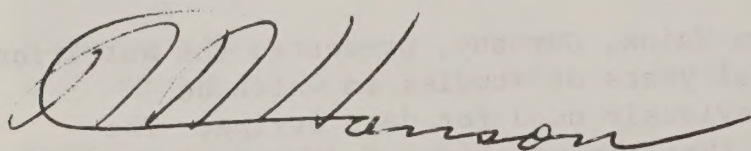
Dr. Frank D. Enzie was born in Dansville, New York, and attended Ohio State University from 1935 to 1940 receiving his Doctor of Veterinary Medicine.

He joined ARS upon completion of his DVM as a Veterinarian, Tuberculosis Eradication Division, Bureau of Animal Industry at Brucellosis Laboratories in Ohio, North Carolina, and Virginia.

He transferred to Beltsville in 1942 with the Zoological Division, BAI, to conduct anthelmintic research. In 1948 he became a Parasitologist in the Parasitological Laboratory, ADP, continuing anthelmintic research. He became Research Leader, Antiparasitic Investigations, in 1960, Director, National Animal Parasitology Laboratory in 1971, and concurrent with the reorganization in 1972, became Chairman, Animal Parasitology Institute.

His personal research included the use of sodium fluoride treatment for removal of large roundworms from swine; the use of toluene or methylbenzene as an anthelmintic in dogs, cats, chickens, swine, horses, and cattle; the use of bithionol against tapeworms in cats, dogs, sheep, and chickens; the use of levamisole, pyrantel tartrate, morantel tartrate, and rafoxanide against stomachworms in sheep; and production of drug resistant strains of worm parasites.

Dr. Enzie has been active in and held important offices in several professional societies and has published 74 scientific articles.

A handwritten signature in dark ink, appearing to read "A. A. Hanson". The signature is fluid and cursive, with the first name "A. A." being more compact and the last name "Hanson" being more extended.

A. A. Hanson, Director
Beltsville Agricultural Research Center

UNITED STATES DEPARTMENT OF AGRICULTURE
AGRICULTURAL RESEARCH SERVICE
NORTHEASTERN REGION
AGRICULTURAL RESEARCH CENTER
BELTSVILLE, MARYLAND 20705

NOTES FROM THE DIRECTOR

No. 39

October 31, 1974

Employee Activities

ESA Eastern Branch Meeting - Several scientists of the Systematic Entomology Laboratory participated in the program of the Entomological Society of America Eastern Branch Meeting held September 25-27 at Hershey, Pa. Dr. C. W. Sabrosky, as President of the XVth International Congress of Entomology (1976) presented a report. Papers were given by Drs. W. W. Wirth: "Problems in Preparation of a Manual to the Genera of the Ceratopogonidae (Diptera)"; J. M. Kingsolver: "A Computerized Catalog of the Beetles of North America North of Mexico," and B. D. Burks (retired July 1974): "How Effective has Biological Control of the Japanese Beetle, Popillia japonica Newman (Coleoptera, Scarabaeidae), Been in the Washington, D.C. Area?"

Training Course - Dr. Jean R. Adams of the Insect Pathology Laboratory, attended an Electron Microscopy Training Course in New York to receive advanced training and learn specialized techniques for use on the Laboratory's Philips 301 electron microscope.

Examination Committee Service - Dr. William E. Robbins, Chief, Insect Physiology Laboratory, recently served on the Examination Committee to examine the thesis "Studies on Sterol Metabolism in Trogoderma granarium Everts" submitted by Shri A. M. Gangadharan Nair for the Ph. D. Degree at the Department of Zoology, University of Delhi, India.

Foreign Travel - Dr. Alley E. Watada, Horticultural Crops Marketing Laboratory, presented a paper coauthored with Judith Abbott entitled "Nondestructive objective measurements of peach firmness" at the XIXth International Horticultural Congress, Warsaw, Poland, held September 10-18. He also visited state operated processing plants, a farmer's market, cooperative fresh fruit and vegetable wholesalers and research laboratories. He reviewed two PL-480 projects in Poland and visited with scientists who were interested in PL-480 post-harvest projects.

Third International Congress of Parasitology - Dr. J. Ralph Lichtenfels and Mrs. Judith H. Shaw of the Animal Parasitology Institute attended the Third International Congress of Parasitology in Munich, Germany, recently. Dr. Lichtenfels presented an invited paper entitled "Systematic Value of Cuticular Ridges of Some Trichostrongylin Nematodes." Mrs. Shaw served on a committee that drafted a resolution adopted by the Congress, deploring the fact that new taxa had been named in the Congress abstracts with inadequate descriptions resulting in confusion in the literature.

New Book Publication - Volume I of Insect Diseases, which was published recently, was edited by George E. Cantwell, Insect Pathology Laboratory, with a dedication to Dr. Samuel Dutky, Insect Physiology Laboratory, for his direction and leadership of the milky disease program leading to control of Japanese beetles in the Northeastern United States. Two of the contributors to this volume,

Drs. James L. Vaughn and Robert N. Faust, are located here at Beltsville in the Insect Pathology Laboratory. Volume II will be published at a later date.

Canadian University Visit - Dr. Jeffrey F. Keown of the Animal Improvement Programs Laboratory, was invited to visit MacDonald College of McGill University Ste. Anne de Bellevue on October 3 and 4, 1974. Dr. Keown presented a talk entitled "Mixed Models in Sire Evaluation" to the Animal Science Department. He also met with Dr. John Moxley, Head of the Dairy Herd Analysis Service Program for Quebec and the Maritime Provinces, to discuss their system of data collection of dairy records.

Review Participation - Dr. H. E. Heggstad, Chief, Air Pollution Laboratory, participated in the review of ecosystem modeling research of the Oak Ridge National Laboratory, Atomic Energy Commission, held at Germantown, Maryland, October 1-2, 1974. Pollutants in the environment are receiving increased attention in their research programs.

Nutrition Work Cited - Research at BARC on the protein quality of breakfast cereal-milk combinations was cited recently by Dr. Jean Mayer in his syndicated column on nutrition. In answer to a reader's question, he referred to work done by Drs. Madelyn Womack and David Vaughan of the Protein Nutrition Laboratory and Dr. Larry Miller of the Data Systems Application Division, which showed that some of these mixtures could provide a significant portion of the Recommended Dietary Allowance for good quality protein.

Post-doctoral Appointment - Dr. Subhash C. Domir will be spending one year on a postdoctorate in the Pesticide Degradation Laboratory. He will be working on the distribution and forms of arsenic found in soils and wheat after treatment with an organic arsenical herbicide. Dr. Domir is a recent graduate of the Department of Plant Pathology and Physiology, College of Agriculture and Life Sciences, VPI and State University, Blacksburg, Virginia.

Honors and Awards

Dr. Douglass R. Miller, Systematic Entomology Laboratory, has been elected President of the Entomology Club of the University of Maryland for a one-year term beginning in early October. Dr. Miller is planning some interesting field activities for students in Maryland's Department of Entomology.

Dr. H. Marc Cathey, Chief, Ornamentals Laboratory, was elected President of the American Horticultural Society at its recent 29th Congress.

Dr. Raymon E. Webb, Chief, Vegetables Laboratory, has been elected as a Councillor of the Indian Potato Association of the Central Potato Research Institute, SIMLA, India. Dr. B. B. Nagaich, Editor of the Association, informed Dr. Webb of his selection in September.

Invited Papers

Current Trends in Pesticide Research was the title of an invitational seminar presented by Dr. P. C. Kearney, Chief, Pesticide Degradation Laboratory, to the scientific staff at the Imperial Chemical Industries, Ltd. research center, Jealott's Hill, England, during the IUPAC meeting there in September.

"American Coneflower Roots: A Pesticidal Cornucopia" was the title of an invited paper presented by Mr. M. Jacobson, Chief, Biologically Active Natural Products Laboratory, at the National Meeting of the American Chemical Society held in Atlantic City, September 9-13.

Sterol Symposium - Dr. James A. Svoboda and Mr. Malcolm J. Thompson of the Insect Physiology Laboratory were invited to participate in a symposium on comparative steroid chemistry and biochemistry of vertebrates, plants and invertebrates. Dr. Svoboda delivered a paper entitled "Unusual Sterol Content and Metabolism of the Mexican Bean Beetle" including a comparative discussion of sterol metabolism in plant feeding insects. Mr. Thompson's paper entitled "Comparative Inhibitive Effects of Certain Structurally Modified Azasteroids and Related Nitrogen Containing Steroids Upon Insect Growth and Development" concerned structure-activity relationships of a number of new steroids and the development of non-steroidal compounds with activity similar to these azasteroids.

Non-Steroidal Secondary and Tertiary Amines that Inhibit Insect Development, Metamorphosis and Steroid Metabolism" was the title of an invitational paper delivered by Mr. Malcolm J. Thompson of the Insect Physiology Laboratory at the 168th National Meeting of the American Chemist Society, Atlantic City. The paper was presented at a session of the Pesticide Chemistry Division that dealt primarily with insect chemistry and biochemistry.

"Herbicide-Lipid Interactions" was the title of an invitational paper presented at the national meeting of the American Chemical Society in Los Angeles, by Dr. Judith B. St. John, Pesticide Action Laboratory. The paper was coauthored by Dr. J. L. Hilton, Chief of the Laboratory. Dr. St. John also presented an invitational paper entitled "Application of the Luciferin-Luciferase System for ATP Determination to Studies on the Mechanisms of Herbicide Action," at the second annual meeting of the American Society for Photobiology in Vancouver, British Columbia. The paper was coauthored by H. R. Carns, Chairman of the Plant Physiology Institute.

BARC SCIENCE SEMINAR

Professor John T. Bonner, Head of the Department of Biology at Princeton University, and a member of the National Academy of Sciences, gave the first of the 1974-75 series of Science Seminars in the BARC Auditorium on October 9. The title of Bonner's seminar was "Chemical signals in the development of slime molds." His 30 years of work on these organisms is of great significance to all of developmental biology and to studies of the evolution of higher organisms from lower forms. He has recently shown that the nucleotide, cyclic AMP, can cause the free-living amoebae of some species of slime molds to aggregate into a multicellular organism showing differentiation of cell types. His approach to the study of morphogenesis, growth, and development is quite original. His in-depth comprehension of the entire field of organismal development is evident from his numerous books and from his lectures. His seminar was stimulating and informative to our scientists and visitors. Professor Bonner, in turn, was quite impressed by the range and depth of research activities here and by our "excellent" library facilities.

Cooperative Activities

Television Appearance - Mr. M. Jacobson, Chief, Biologically Active Natural Products Laboratory, appeared on the USDA television program "Down to Earth" on October 3 to extol the merits of American coneflower roots, from which he, Dr. D. J. Voaden, BANPL, and Mr. R. E. Redfern, Biological Evaluation of Chemicals Laboratory, and the National Cancer Institute have obtained a potent insecticide, an inhibitor of insect development, and a tumor inhibitor.

Research Aids in the Development of New Meat Distribution Center - Several Hartford, Connecticut meat firms, now located in old, obsolete facilities which are scheduled for demolition because of urban renewal and highway construction programs, approached the Livestock and Meat Marketing Laboratory for aid in the development of new, modern, efficient facilities. Based on recommendations submitted in an interim report by Mr. Ronald Smalley and Dr. Tarvin Webb, officials of the Connecticut State Bonding Commission approved the project on October 9 and authorized a \$3 million bond issue for 25 year debentures. Over \$2 million of these funds have been designated for use in the construction of 46,800 square feet of refrigerated multiple-occupancy facilities to house five Hartford area meat wholesalers. The remainder will be authorized for construction of a single-occupancy refrigerated facility in the future. These structures will be located on 4.5 acres of land on the Connecticut Regional Produce Market.

Environmental Chemistry Task Group - Three members of the Pesticide Degradation Laboratory - Drs. Donald D. Kaufmann, Charles S. Helling, and Jack R. Plimmer - recently served on a special Environmental Chemistry Task Group. The 6-member committee, chaired by Dr. Kaufman, included scientists from Dow Chemical Company, 3M Company, and the University of California. Within a four-month period, this committee wrote protocols for laboratory and field testing of pesticides prior to registration. In addition, concepts of benchmark chemicals and reference soils were advanced; additions and deletions to the present EPA guidelines were also suggested. This and related committees were administered by the American Institute of Biological Sciences (AIBS), under an EPA contract.

Fluid Milk Plant Remodeling Program Underway - Charles F. Stewart, Dairy and Poultry Products Marketing Laboratory, studied the operations of a fluid milk processing plant in Westwego, Louisiana, in order to develop guidelines for increasing operating efficiency, meeting regulatory requirements, and providing for future growth. Remodeling plans and improved operating methods were developed for processing and handling a 100 percent increase in present volume. Determinations were also made regarding the labor requirements, initial investment costs, and potential benefits in operating the remodeled facility. Study findings showed that by implementing the proposed changes, the production labor cost could be reduced by 39 percent in processing and handling the future volume. The remodeling program is already underway.

Visitors From:

India - The Nutrition Institute recently played host to Drs. G. C. and I. B. Chatterjee of the Department of Biochemistry of the University of Calcutta. During their visit to Beltsville both Drs. Chatterjee presented seminars

which discussed their nutrition research that is funded under the PL 480 program. G. C.'s talk was entitled "Studies on Vitamin C Metabolism in Animals" and I. B.'s lecture was called "Evolution, Biosynthetic Ability, and Function of Vitamin C." Cooperative scientist for both of these investigators is Dr. Orville A. Levander, Acting Chief of the Vitamin and Mineral Nutrition Laboratory.

New Zealand - Dr. G. B. Russell of the Applied Biochemistry Division, Department of Scientific and Industrial Research, Palmerston North, New Zealand, visited with the staff of the Insect Physiology Laboratory to discuss and consult with them on the chemistry, biochemistry, and action of the insect molting hormones.

Italy - Dr. P. DePietri-Tonelli, in charge of Pesticide Research Coordination, Montedison (Montecatini-Edison), Milan, Italy, visited the Biologically Active Natural Products Laboratory, to discuss insect sex pheromones with Martin Jacobson, insect hormones with Dr. Meyer Schwarz, and insect electrophysiology with Victor E. Adler.

Egypt - Dr. Salal E. Abul-Nasr of the Faculty of Agriculture, Cairo University, visited the Insect Physiology Laboratory on September 24 to consult with the staff and discuss current research on the use of insect hormonal chemicals for insect control. He also visited the Insect Pathology Laboratory to discuss the conduct of his research supported by a PL 480 grant. Dr. Abul-Nasr brought a virus from Heliothis armigera and a culture of Bacillus thuringiensis isolated in Egypt. These cultures are being examined by USDA specialists.

England - Mr. N. A. Hurt, Agricultural Division, Food Industries Ltd., Birkenhead, England, visited with Martin Jacobson, Chief Biologically Active Natural Products Laboratory, to discuss cooperative insect attractant projects.

Brazil - Mrs. Magaly Wetzel, a Brazilian graduate student in seed pathology, Seed Technology Laboratory, Mississippi State University, was a visitor at the Seed Quality Laboratory, September 22-October 4. Mrs. Wetzel received instruction from Dr. Martin Kulik in seed health testing methodology and seed pathology. When Mrs. Wetzel returns to Brazil later this year she will be employed by the Ministry of Agriculture as Brazil's first seed pathologist.

Germany - Dr. Ernst-Friedrich Schulze of the Plant Protection Department, Farbwerke Hoechst AG, Frankfurt, Germany, visited the Insect Physiology Laboratory to consult with the staff of the Laboratory on the use of insect hormonal chemicals for insect control.

Japan - Dr. Masanao Yonekura, Chief Researcher, Kanagawa Prefectural Agricultural Research Institute, visited the Beneficial Insect Introduction Laboratory on October 8. Dr. Yonekura met with Jack R. Coulson and Suzanne W. T. Batra of the BIIL to discuss plans for developing research on the biological control of weeds in Japan, and the possibility of cooperation between biocontrol researchers in the U.S. and Japan.

Biographical Sketches

Dr. H. Marc Cathey, Chief, Ornamentals Laboratory, was born in North Carolina and received his B.S. from North Carolina State University, and his M.S. and

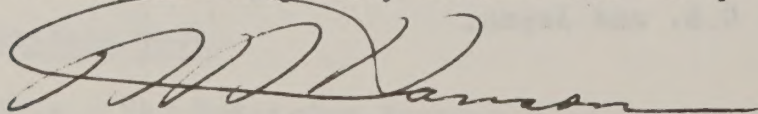
Ph.D. from Cornell University: He was a Fulbright Fellow at the Netherlands Institute for Agriculture, Wageningen, The Netherlands. He joined ARS as a Research Horticulturist (Ornamentals) in 1956. In 1967, he was appointed Leader of Ornamental Research. Concurrent with the reorganization, he became Chief of the Ornamentals Laboratory.

His personal research has included the roles of phytochrome in controlling the flowering of chrysanthemums; the physiology of growth retarding chemicals and their practical applications on plants; a revolutionary technique for reducing electrical costs for obtaining photoperiodic control of the growth and flowering of ornamental plants; the use of lower alkyl esters of fatty acid derivatives in aqueous emulsions to selectively kill the stem apex without damaging the lateral meristem, foliage, and stem tissues; procedures for germinating seeds of 112 different kinds of annual, pot plants, and ornamental herbs by separating them into nine groups based on their response to light and temperature; the techniques for the first commercial use of 2-chloroethane-phosphonic acid (ethephone) in regulating the flowering of bromeliads; the use of tolerant cultivars and chemical growth retardants to significantly alter injury to ornamental plants by ozone and sulfur dioxide, the use of synthetic abscisic acid to alter the photoperiodic responses of several important ornamental plants; and the application of chemical growth retardants through the use of ultra-low volume equipment. He is a world authority and advisor on growth regulating systems and culture of ornamental plants. He received a Certificate of Merit from USDA and is a Fellow of the American Society for Horticultural Science. He was elected President of the American Horticultural Society for 1974.

Dr. Meryl N. Christiansen, Chief, Plant Stress Laboratory, was born in Iowa and received his B.S. and M.S. from the University of Arkansas and his Ph.D. from North Carolina State University in 1960.

He joined ARS in 1955 following completion of his M.S. as a Research Agronomist at Stoneville, Mississippi. He completed his doctorate while on leave from ARS and returned to Stoneville as a Plant Physiologist. He transferred to Beltsville in 1964. Concurrent with the reorganization he became Chief of the Plant Stress Laboratory, PPhI.

His personal research has included genetic heritability of the physical and chemical block to water entry into cottonseed with impermeable seedcoat; a dry weight transfer test to measure performance of germinating seedlings in terms of mobilization of seed reserves, translocation of reserves to seedling axis, and re-synthesis into axis components; two types of chilling injury to cotton seedlings; hydration of cottonseed to prevent chilling injury; use of calcium to reverse losses of endogenous substances from radicle tips induced by environmental stress and the use of metflurzone (Sandoz 6706) to inhibit chloroplast maturation and circumvention by use of unsaturated C18 fatty acids or vitamin E. Dr. Christiansen is a member of and has held offices in several professional societies. He is an international authority on cottonseed quality measurement and preservation, and germination physiology.



A. A. Hanson, Director
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NOTES FROM THE DIRECTOR

No. 40

November 14, 1974

Employee Activities

Insect Pathology Workshop - Dr. A. M. Heimpel, Chief, and Dr. Spiro J. Louloudes of the Insect Pathology Laboratory, attended the ARS Insect Pathology Workshop held at the Insect Affecting Man Research Laboratory, ARS, at Gainesville, Florida.

Bean Rust Research Workshop and Bean Production Systems Program Evaluation Workshop - Dr. J. P. Meiners, Chief, Applied Plant Pathology Laboratory, and Dr. W. J. Zaumeyer, Plant Pathologist, Retired, participated in both workshops held at Centro Internacional de Agricultura Tropical (CIAT), Cali, Colombia, in October. The Bean Rust Research Workshop resulted in the organization of an International Bean Rust Nursery program to evaluate germplasm for resistance, and established an international system for identification of pathogenic strains. The purpose of the second Workshop was to evaluate the recently established research program of the bean improvement research team at CIAT.

Foreign Plant Collection - Mr. Harold F. Winters, Germplasm Resources Laboratory, returned to his office on September 4 after eight weeks in the Andean Region of South America. He and Dr. Raymond L. Clark, Ames, Iowa, collected wild and cultivated tomatoes as well as other crop plants from Colombia, Ecuador, and Peru. Although northwestern South America is the center of origin for tomato, primitive cultivars are rapidly being replaced by U.S. cultivars in that area. The primitive tomatoes and wild species contain a reserve of germplasm which should be preserved.

Beetle Research - Two scientists of the Systematic Entomology Laboratory, T. J. Spilman and Rose Ella Warner Spilman, visited the Museum of Comparative Zoology at Harvard University, Cambridge, Massachusetts, in October, the former to confer with colleagues and study type specimens in connection with research on darkling beetles and spider beetles, the latter to study type specimens of the beetle genus Eucllyptis, a group of seed-eating weevils. As a result of this investigation, a weevil infesting seeds of bigtooth maple or canyon maple (Acer grandidentatum) in Utah has been identified as a new species and will be described. The maple is under study by the U.S. Forest Service as a promising candidate for planting in recreational lands surrounding water impoundments in the otherwise treeless areas of the intermountain region. Presence of this unnamed species of weevil has proven to be an obstacle to propagation of the tree.

Food Distribution Facility Research Aired on "Down To Earth" - Kenneth H. Brasfield, Chief, Food Distribution Research Laboratory, was interviewed recently for U.S.D.A.'s "Down To Earth" TV program concerning his Laboratory work on improving wholesale food distribution facilities in cities. The interview was televised in the Washington area on Channel 4 on November 5.

Savannah Conference - Two Research Entomologists of the Systematic Entomology Laboratory, Drs. John M. Kingsolver and Curtis W. Sabrosky, attended the First International Working Conference on Stored-Product Entomology held at Savannah, Georgia, October 7-11. Dr. Sabrosky, who is President of the XVth International Congress of Entomology (Washington, D.C., 1976), presented an invitational address "Internationally Speaking," at the banquet on October 10. Emphasis of the Conference was on finding better ways to control insects in food storage, and about 185 scientists from 31 countries were in attendance.

Invitational Papers

Dr. Julius Feldmesser, Nematology Laboratory, presented an invitational paper, "Progress report on controlled release of a nematocide," at the Controlled Release of Pesticides Symposium, University of Akron, September 16-18. Dr. Feldmesser also served on the ad hoc Steering Committee, appointed by the University of Akron, to help establish the Symposium as a continuing entity, with arrangements for lines of communication and future meetings.

Honors and Awards

The Michigan Blueberry Growers Association presented its Blueberry Pioneer Award to Dr. D. H. Scott for recognition of his unique contribution to the midwestern blueberry industry during the past 25 years. The award was formally presented on November 6, 1974, as a highlight of the North American Blueberry Research Worker's Conference.

Cash Awards

Dr. M. Isabel Irwin was presented with a Cash Award in recognition of her research and compilation of material for the Atwater Symposium held at the Federation of American Societies of Experimental Biology in Atlantic City, which resulted in publicizing in the best scientific way the achievements of the U.S. Department of Agriculture in human nutrition research.

Mr. Ray R. Rew was presented a Cash Award for devising an improved method for producing an essential research material with concomitant savings in energy, time, and labor.

Cooperative Activities

New Cheese Sampled - Scientists attending the annual meeting of the American Society of Animal Science in College Park, Md., were served an experimental polyunsaturated cheddar cheese. About 1000 participants at a reception were given an opportunity to sample this new food, designed for consumption by the cardiac-concerned. The cheese was provided by the cooperative efforts of Dr. Walter Dunkley of the Department of Food Sciences, University of California, Davis, and Dr. Joel Bitman, Biochemistry Laboratory.

Multiple Use of cows fed Polyunsaturated Fat Rations - A wide base of cooperative effort was recently demonstrated when cows fed polyunsaturated fat rations for over two years were slaughtered by the Biochemistry Laboratory. In addition to tissue samples saved from these unique animals by Joel Bitman and Randall Wrenn, the following were provided for others: Mammary tissues

were utilized by Harry Farrell and Elizabeth Bingham, ERRC, cardiovascular tissues by bovine atherosclerosis expert Kenneth D. Wiggers of Iowa State University; cuts of meat for taste panel testing by Russell Cross, Livestock and Meat Marketing, AMRI; material for evaluation by Clifton Swift and Walter Kimoto of the Meat Laboratory, ERRC; and blood to be used by Lawrence Pickens of the Chemical and Biophysical Control Laboratory, AEQI, for the rearing of insects.

Wholesale Food Distribution Center Study in Northern New Jersey - Kenneth H. Brasfield and Richard K. Overheim, Food Distribution Laboratory, met with the New Jersey Interdepartmental Committee on a New Jersey food distribution center recently in Trenton. They attended at the request of New Jersey Secretary of Agriculture Phillip Alampi to discuss the question of a cooperative ARS-State-local food industry study of the wholesale food distribution facilities in the metropolitan Northeastern New Jersey area. The goal is the future construction of a new wholesale food distribution center for the area. On advice from Mr. Brasfield and Mr. Overheim, the Committee and the State Department of Agriculture are moving forward with preliminary investigations that should prove valuable in any final planning of such a project.

Situations and Events

A workshop-conference on the important plant pathogen Sclerotinia sclerotiorum was sponsored by the Soilborne Diseases Laboratory and held October 30-31 and November 1 in the Bioscience Conference Room. After a welcoming address by Dr. A. A. Hanson, the participants discussed the taxonomy, physiology, and survival of the pathogen and the susceptible-pathogen relationship, epidemiology, losses and control of the diseases of many crop plants. Drs. Peter B. Adams and Robert D. Lumsden served as hosts of the workshop, as members of the organizing committee, and as session chairmen. Over 35 scientists from the U.S. and Canada participated.

4-H'ers BARC Visit - During the weeks from June 1 through August 30, nearly 6,500 teenage 4-H'ers and their adult leaders from 44 states, visited the Center as a part of a 4-H Citizenship Short Course. In a letter to Secretary Butz, Mr. V. Joseph McAuliffe, Director, Educational Programs & Services, National 4-H Foundation, commended Dr. Hanson and his staff, the Visitor Staff, the speakers, on-site guides and tour leaders, for their assistance which "went way beyond the call of duty." Following is a list of those participants:

SPEAKERS

A. A. Hanson, Director
 P. A. Putnam, Assistant Director
 H. M. Cathey, Ornamentals Laboratory
 R. R. Oltjen, Ruminant Nutrition Laboratory
 N. O. Morgan, Chemical & Biophysical Control Laboratory
 C. C. Calvert, Biological Waste Management Laboratory
 L. W. Smith, Biological Waste Management Laboratory
 H. E. Heggstad, Air Pollution Laboratory
 M. S. Schechter, Chemical & Biophysical Control Laboratory
 W. N. Sullivan, Chemical & Biophysical Control Laboratory
 A. K. Stoner, Vegetable Laboratory

T. H. Barksdale, Vegetable Laboratory
 W. W. Cantelo, Vegetable Laboratory
 M. Beroza, Organic Chemical Synthesis Laboratory
 M. Faust, Fruit Laboratory
 R. H. Zimmerman, Fruit Laboratory

VISITOR STAFF

C. S. Britt
 D. P. Morgan
 J. F. Flemming
 V. T. Griffin
 M. A. Hardingham

ON-SITE SPEAKERS AND TOUR GUIDES

R. E. Hodgson, (Retired from NPS)
 F. P. Cullinan, (Retired Director of Crops Research)
 M. Combs, Instrumentation Laboratory
 R. Green, Systematic Entomology Laboratory
 V. Mazzola, Haemoprotozoan Diseases Laboratory
 P. Rosenblum, Physical Control Laboratory
 M. Steele, Physical Control Laboratory
 W. Shainline, Genetics & Management Laboratory
 S. Shufelt, Chemical & Biophysical Control Laboratory
 G. Wigand, Hydrograph Laboratory
 A. Randall, Director's Office
 L. Skinner, Avian Physiology Laboratory
 A. Campbell, Pesticide Action Laboratory
 J. M. Schalk, Vegetable Laboratory
 A. Neinstedt, Vegetable Laboratory
 B. Otto, Vegetable Laboratory
 A. S. Michael, Bioenvironmental Bee Laboratory
 M. Goodwin, Bioenvironmental Bee Laboratory
 E. Herbert, Bioenvironmental Bee Laboratory
 W. Wynn, Bioenvironmental Bee Laboratory
 H. Shimanuki, Bioenvironmental Bee Laboratory
 E. Williams, Ruminant Nutrition Laboratory
 M. Poos, Ruminant Nutrition Laboratory
 F. Daniels, Ruminant Nutrition Laboratory
 M. Ebner, Fruit Laboratory
 T. Bullett, Fruit Laboratory
 E. C. Frazier, Air Pollution Laboratory
 J. Holst, Field Crops Laboratory

Visitors From:

Poland - Dr. Hanna Seryczynska, representing Professor H. Sandner of Poland, visited the Insect Pathology Laboratory for three days. Dr. Seryczynska is working on a PL 480 project in Poland on nematodes affecting insects. Her visit permitted a review of her project and allowed her to visit most of the members of the laboratory. As an electron microscopist, she particularly enjoyed her visit with her counterpart, Dr. Jean R. Adams.

Pakistan - Dr. Mohammad Aslam, Dean of the Faculty of Agriculture, Agricultural University, Lyallpur, Pakistan and Principal Investigator of the PL 480 project, "Development of Grain Legumes in Pakistan," visited with Dr. J. P. Meiners, Chief, Applied Plant Pathology Laboratory, who is cooperating scientist for the project.

New York and Connecticut - Curators of two major U.S. insect collections, Drs. Charles L. Remington of Yale University, and Frederick H. Rindge of the American Museum of Natural History, New York City, arrived as visitors at the Systematic Entomology Laboratory on October 22. They studied moths and butterflies in the National Collection and conferred with Research Entomologist D. C. Ferguson on identification and biogeographic problems, and with Drs. Ferguson and R. W. Hodges on the proposed new Check List of the Lepidoptera of America North of Mexico. Dr. Rindge will be an important contributor to this work.

England - Drs. G. C. Mees and R. D. Jerrett (representatives of ICI headquarters in England) visited the Insect Pathology Laboratory. Their interest involved our research on the production of insect viruses in insect tissue culture lines. This is the second visit in two months regarding this subject. The other visitor was Dr. H. F. Schultz from West Germany.

South Africa - Dr. J. A. Vanwyk, Chief of the Laboratory of Helminthology, Veterinary Research Institute of the Republic of South Africa, visited with members of the Animal Parasitology Institute to discuss problems related to maintenance of helminth cultures and to the anaplasmosis diagnostic card test.

Russia - Dr. Y. N. Fadeev, Director, Southern Division, All-Union Lenin Academy of Agricultural Sciences, Moscow; Dr. V. P. Vasiliev, Director, Ukrainian Plant Protection Institute, Kiev; Dr. E. Shumakov, All-Union Plant Protection Institute, Leningrad; and Dr. A. I. Smetnik, Ministry of Agriculture, Moscow, visited with Jack R. Coulson, Beneficial Insect Introduction Laboratory, in connection with the exchange of biological control materials between the U.S. and USSR. Mr. Coulson also arranged for the group to visit the Plant Protection Institute, Agricultural Environmental Quality Institute, and the Vegetable Laboratory of the Plant Genetics & Germplasm Institute.

Australia - Dr. Bryan Harrap, Division of Food Research, CSIRO, Melbourne, visited with BARC scientists John Alford, Joel Bitman, David Dinius, J. M. Iacono, Hal Slover, and Randall Wrenn. Discussions involved the progress in making dairy and meat products of higher than normal polyunsaturation. Dr. Harrap indicated that polyunsaturated meat and milk products would soon be available to Australians through two different heart clinics.

Biographical Sketches

Dr. Frank N. Dickinson, Chief, Animal Improvement Programs Laboratory, was born in Massachusetts, and received his B.S. from the University of Massachusetts, his M.S. and Ph.D from the University of Illinois.

He joined ARS as a Dairy Husbandman at Urbana, Illinois, in 1957. He transferred to Beltsville in 1961 as an Analytical Statistician. He left ARS in 1965 for two years and was an Assistant Professor at the University of

Massachusetts. He returned to Beltsville as a Research Scientist in 1967, and in 1969 was appointed Leader of DHI. Concurrent with the reorganization, he became Chief, Animal Improvement Programs Laboratory, APGI.

His personal research involvement has included AM-PM sampling plan for DHIA; sire's Predicted Difference for milk yield and his daughter's income over feed cost in first lactation; likely sources of bias in Herdmate Comparison Sire Summary procedures; Beltsville Test Herd System; USDA-DHIA complete Cow Indexing System; an economic index for the genetic evaluation of dairy bulls and cows; a stepwise genetic base to overcome the disadvantages of fixed and moving genetic bases; and USDA-DHIA Preliminary Sire Summaries. He is senior author on eleven scientific publications and co-author on several others. He has received two invitations to present material at international meetings in Europe. He has engaged in numerous technical advisory activities for various segments of the dairy industry, including speaking engagements, membership and chairmanship of several industry committees, and representing ARS at regional and national workshops and meetings relating to the National Cooperative Dairy Herd Improvement Program and the USDA-DHIA genetic evaluation programs for dairy cattle.

Dr. Howard E. Heggstad, Chief, Air Pollution Laboratory, was born in Wisconsin and received his B.S. and Ph.D. from the University of Wisconsin. He served as Instructor in the Horticultural Department at the University from 1944 to 1946.

He joined ARS at Greenville, Tennessee, in 1946 where he was a breeder of disease-resistant burley tobacco varieties. He transferred to Beltsville in 1955 to assume responsibility for ARS research on diseases and breeding of all types of tobacco. In 1963, he became Acting Leader, Tobacco Investigations, and in 1964, Leader, Tobacco Breeding and Disease Investigations. In 1966, he became Leader of the newly established Plant Air Pollution Laboratory, Crops Research Division. Concurrent with the reorganization, he became Chief, Air Pollution Laboratory, AEQI.

Dr. Heggstad's personal research has involved cooperation with many scientists. It has resulted in several multiple disease-resistant varieties of tobacco; discovery that photochemical oxidants, primarily ozone, was the cause of tobacco leaf injury known as weather fleck; discovery of synergistic action of ozone and sulfur dioxide; identification of tolerance of varieties of several plant species to the air pollutants, ozone and sulfur dioxide; new evidence that ethylene is a significant air pollutant in the urban environment; growth retardants reduce air pollution injury to petunias and poinsettias; photochemical oxidants cause a leaf spot and reduce productivity of potatoes; and assessment of yield reduction of snap beans attributable to photochemical oxidants. He has received national and international recognition for both his research on tobacco and on air pollutants.

A. A. Hanson

A. A. Hanson, Director
Beltsville Agricultural Research Center

UNITED STATES DEPARTMENT OF AGRICULTURE
AGRICULTURAL RESEARCH SERVICE

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AGRICULTURAL RESEARCH CENTER
BELTSVILLE, MARYLAND 20705

NOTES FROM THE DIRECTOR

No. 41

November 29, 1974

Employee Activities

Russian Tour - Drs. Robert Oltjen and Lowell Frobish of the Nutrition Institute recently returned from a three-week tour of the USSR. They were members of the U.S. Livestock Production Team which traveled extensively to access the "state of the art" of livestock research and animal production practices in the Soviet Union. The primary objective of the visit was to determine in what areas cooperative animal research could be initiated that would be of benefit to both countries. Three ARS, one CSRS, and two representatives from universities comprised the team. Several mutual problem areas exist, the most important being management systems used for total confinement of large numbers of farm animals, collection and preservation techniques used in artificial insemination and several aspects of reproductive physiology in farm animals. The tour took them to 7 cities, 10 research centers and 6 state and collective farms. A Soviet Livestock Production Team will travel in the U.S. to determine the research and production practices in this country in the exchange program.

Address at Joint Session - Dr. A. A. Hanson presented a special address on November 12 at a joint session of Crop Science Society of America and Soil Science Society of America in Chicago, Illinois. The title of his address was "Brinkmanship in Agricultural Production and Research."

USDA Research Monograph Published - Sixteen years of research by the Soilborne Diseases Laboratory on Aphanomyces species culminated in the publication of a monograph entitled "Aphanomyces Species and their Root Diseases in Pea and Sugarbeet." In addition to the Lab's research, the review, prepared by Drs. G. C. Papavizas and W. A. Ayers, also contains an extensive bibliography.

Editorial Appointment - Dr. George Papavizas, Chief, Soilborne Diseases Laboratory, has been reappointed to a 3-year term on the Board of Regional Editors of the British Journal Soil Biology and Biochemistry. The journal, published by Pergamon Press, was initiated 6 years ago to publish research information on various biochemical, physical, and biological aspects of the soil environment.

Invited Papers

"Dietary Carbohydrates and Human Nutrition - A Review" was the title of a paper presented by Dr. Sheldon Reiser, Chief, Carbohydrate Nutrition Laboratory, at the 59th Annual Meeting of the American Association of Cereal Chemists held in Montreal, Canada, recently.

University of New Hampshire Lecture - Dr. Eliot Epstein, Biological Waste Management Laboratory, was invited to the University of New Hampshire to present a lecture to Sigma XI on November 21. The subject of his presentation was "Land Disposal of Municipal Wastes."

"Trends in the Development of Food Distribution Centers" was the title of an invitational paper presented by Mr. Kenneth H. Brasfield, Chief, Food Distribution Research Laboratory, at the Seventeenth New Jersey Marketing Institute held at the Forsgate Country Club, Jamesburg, New Jersey, November 7. The theme of the Institute was "Marketing Recommendations of the Blueprint Commission on the Future of New Jersey Agriculture." Approximately 150 leaders in food marketing from the food industry, educational institutions, and Federal and State departments of agriculture attended the affair which was cosponsored by the New Jersey Department of Agriculture and the New Jersey Agricultural Society.

Cooperative Activities

North Central Regional Research Project NC-125 - Drs. G. C. Papavizas and J. A. Lewis of the Soilborne Diseases Laboratory, recently attended the annual meeting of the North Central Regional Research Project NC-125 at the University of Illinois at Urbana. They are ARS representatives to this project whose title is "Development of Root Diseases Control Technology with Emphasis on Biological Control in Corn and Soybean and Other Crops with Common Pathogens." Drs. Papavizas and Lewis presented some aspects of their work concerned with the soilborne soybean pathogens Macrophomina phaseolina and Rhizoctonia solani. In addition, samples of various soil types cropped to soybeans, and pathogen infested, were obtained from Illinois, Indiana, and Ohio for further studies on biological, chemical, and physical differentiation of soils in relation to disease.

Southern Cooperative Series Bulletin Published - A regional bulletin entitled "The Relation of Soil Microorganisms to Soilborne Plant Pathogens" was published in November 1974. This bulletin, composed of 16 research papers, was prepared cooperatively by Experiment Station scientists in the Southeastern Region and by scientists of the Soilborne Diseases Laboratory. The monograph was edited by Dr. G. C. Papavizas.

Visitors From:

Poland - Dr. Jan Boczek from the Agricultural University of Warsaw, visited with Drs. William Cantelo and James Schalk of the Vegetable Laboratory. He also conferred with Drs. Floyd Smith and Ralph Webb of the Ornamentals Laboratory regarding insect research problems in agriculture.

Mexico - Professor Ma. de Lourdes de Bauer, Colegio de Postgraduados, Escuela Nacional de Agricultura, Chapingo, Mexico, visited the Air Pollution Laboratory recently. She is a Plant Pathologist concerned with the relatively severe air pollution injury she has observed on indicator plants in Mexico City.

Chile - Mr. Eugenio Silva Rozas, Agricultural Engineer, Central Fruticola de Curico, Curico, Chile, visited the Horticultural Crops Marketing Laboratory to discuss fruit storage and quality evaluation with Dr. R. E. Hardenburg and staff. Mr. Rozas was commissioned by his government and the Interamerican Development Bank to visit fruit producing areas of the U.S.

USSR - Dr. V. N. Syurin, Manager of Laboratory Problems in Virology, Moscow Veterinary Academy, Dr. A. N. Litvinov, Senior Scientific Worker, All-Union Government Scientific Control Institute for Veterinary Medicine, and Dr. A. A. Konopatkin, Senior Scientific Worker, All-Union Scientific Research Institute of Experimental Veterinary Medicine, visited the Animal Parasitology Institute on the first stop in a 3-week tour of veterinary research, educational, and disease control institutions in the United States. After a brief discussion with the Chairman on the Institute's organization and research program, the Soviet scientists visited and discussed current research activities with several staff scientists.

Poland - Dr. Gerard Bakowski, Research Institute of Pomology, Skierniewice, visited Jack R. Coulson, Beneficial Insect Introduction Laboratory, on October 30 for discussion of predators of phytophagous mites and aphids. At Mr. Coulson's request, Dr. Bakowski had brought with him a culture of Anthocoris nemorum, a predaceous bug attacking the European red mite, for use in general ARS and state pest management programs. The culture was taken immediately to the ARS quarantine facilities in Newark, Delaware, for overwintering.

England - Dr. M. Shipway, Ministry of Agriculture, Fisheries and Food, Kirton Experimental Horticultural Station, Kirton, England, visited John Worthington and other staff of the Horticultural Crops Marketing Laboratory to see current research, as part of a month-long tour to see the U.S. fruit and vegetable marketing system.

Germany - Dr. Peter Langeluddeke of the Hoechst Chemical Company, Frankfurt, Germany, is visiting with Dr. W. A. Gentner of the Pesticide Action Laboratory, from October 21 until November 30. Dr. Langeluddeke brought a series of compounds with him from Germany and is conducting a structure-activity study. He is using some of the methods developed by Dr. Gentner in the evaluation of chemicals for their herbicidal properties.

France - Dr. Jean-Francois Dubremetz of the Central National Research Service at the University of Lille, France, visited the Animal Parasitology Institute to discuss recent developments in Sarcocystis research with Dr. Fayer and electron microscopy of coccidian parasites with Mrs. Pacheco, Mr. Madden, and Dr. Vetterling in the Histoprotzoan Diseases Laboratory.

Poland - Drs. Zofia Zwolinska-Sniatalowa and Jadwiga Krzymanska of the Institute of Plant Protection, Posnan, visited the Insect Physiology Laboratory to consult with the staff of the Laboratory on insect nutrition and lipid utilization and metabolism in insects.

England - Dr. J.M.S. Lucas from May and Baker Ltd., Ongar Research Station, Ongar, Essex, United Kingdom, visited the Animal Parasitology Institute to discuss research with Drs. Doran, McLoughlin, Lund, Vetterling, and Fayer of the Histoprotzoan Diseases Laboratory.

England - Dr. R. H. LePelley, (retired), formerly Senior Entomologist, Ministry of Agriculture, Kenya, visited with Miss L. M. Russell, Dr. M. B. Stoetzel, and Dr. D. R. Miller of the Systematic Entomology Laboratory. Dr. LePelley spent most of his time examining the scale-insect host catalogue to gather data for a proposed revision of his book "Pests of Coffee."

New Guinea - Mr. John S. Womersley, Division of Botany, Department of Forests, Lae, New Guinea, visited the Germplasm Resources Laboratory. His main interest was the New Guinea plant material collected in 1970 by H. F. Winters and J. J. Higgins. One of these collections, a Citrus relative, may prove to be a new species.

Virginia - The Animal Parasitology Institute was visited by 15 students in an undergraduate course in Parasitology and their Professor, Dr. Arthur J. Seidenberg, from Virginia Commonwealth University in Richmond. The class toured the Histoprotzoan Diseases Laboratory with Dr. R. Fayer and Dr. J. Vetterling, the Index-Catalogue of Medical and Veterinary Zoology with Mrs. J. Shaw, and the National Parasite Collection with Dr. R. Lichtenfels. Dr. Seidenberg and his class then attended the 486th meeting of the Helminthological Society of Washington at the API Conference House in the evening.

India - Dr. G. P. Channabasavana, Professor of Entomology, University of Agricultural Sciences, Hebbal, Bangalore, India, visited the Systematic Entomology Laboratory in September to discuss taxonomic problems with R. L. Smiley (Acarina Section) and Dr. R. J. Gagne (Diptera Section). He also visited the Insect Chemosterilants Laboratory where he conferred with Drs. S. C. Chang, C. C. Woods, V. H. Adler, P. H. Terry, D. G. McHaffey, and others.

Biographical Sketches

Dr. Harry Herlich, Chief, Ruminant Helminthic Diseases Laboratory, API, was born in Massachusetts and received his B.S. from Tufts College, his M.S. from Alabama Polytechnic Institute, and his Ph.D. from Auburn University. He joined ARS as a Junior Agricultural Entomologist at Orlando, Florida, in 1949. He served as a parasitologist at Auburn from 1949 to 1965 and then transferred to Beltsville. Concurrent with the reorganization he became Chief, Ruminant Helminthic Diseases Laboratory.

His personal research has included bovine nematode parasites; (1) Neoascaris vitulorum, which has the unique epidemiologic facet of prenatal transmission, in contrast to direct oral route of infection followed by all other gastrointestinal nematode parasites of ruminants; (2) Ostertagia ostertagi, which is host specific and incapable of complete sexual development in sheep so that sheep may be used as "vacuum cleaners" to minimize level of exposure of young cattle on contaminated pastures; (3) Trichostrongylus colubriformis, a gastrointestinal nematode parasite of ruminants, could be established experimentally in guinea pigs; (4) Trichostrongylus axei, inoculating calves with only the sexually mature adult stages of the stomach worm elicited

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circulating antibodies, but no evidence of protection against challenge inoculations; (5) cross-immunity between two species, Cooperia punctata, highly pathogenic, and Cooperia oncophora, relatively non-pathogenic, possibility of utilizing non-pathogenic strains as immunizing agents to vaccinate cattle against pathogenic species; (6) vaccinated cattle against Oesophagostomum radiatum by introducing infective stage through the abnormal intravenous route, and (7) development of artificial digestion technique utilizing pensin and hydrochloric acid. He is recognized nationally and internationally as a leader in research on helminthiasis of ruminants.

Dr. George C. Papavizas, Chief, Soilborne Diseases Laboratory, PPI, was born in Greece and received his B.S. from the University of Salonica in 1947. He received his M.S. and Ph.D. from the University of Minnesota majoring in plant pathology. He joined ARS as a Mycologist at Beltsville in 1957. He was reassigned to Microbiologist in 1963. In 1966 he became Investigations Leader, Mushroom and Microbiology Investigations. Concurrent with the reorganization, he became Chief, Soilborne Diseases Laboratory.

During his 17 years with ARS he published more than 120 papers. His personal research has included: Root rot of peas and sugarbeets caused by Aphanomyces euteiches and characterization and purification of exocellular pectolytic enzymes produced by this pathogen; control of pea root rot and blackroot of sugarbeets by cruciferous amendments which, upon decomposition in soil, release dimethyl sulfide, dimethyl disulfide, methanethiol and methylisothiocyanate which, in turn, reduce zoospore germination, germ tube development, and host penetration; black root rot of many economic plants caused by Thielaviopsis basicola and the effect of long-chain fatty acids on germination of its spores; Fusarium root rot control using carbon:nitrogen ratios, crop residues, and seed treatments; an exhaustive study of the pathogen Rhizoctonia solani including its ecology and survival in the field, development of assay techniques for measuring saprophytic activity, and biological and integrated control measures; selective technique for isolating and enumerating Sclerotium cepivorum, onion white rot; isolation of a new antifungal antibiotic produced by a violet-pigmented Pseudomonas sp. from bean roots; and techniques for isolating Macrophomina phaseolina, the soybean charcoal rot pathogen, and studies of its survival in soil.

Dr. Papavizas served as corresponding scientist for 10 PL 480 projects. He received an Outstanding Performance Award in 1959, the AIBS-Campbell Award in 1962, and the Superior Service Award in 1965. He is currently serving as Chairman of the Microbiology and Root Disease Committee of the American Phytopathological Society.

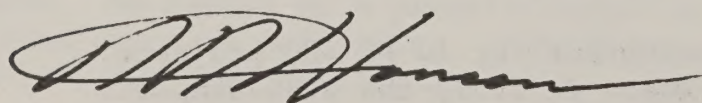
Dr. Miklos Faust, Chief, Fruit Laboratory, PGGI, was born in Hungary, received his B.S. from the Budapest Agricultural University, his M.S. from Rutgers University and his Ph.D. from Cornell University. Following completion of his B.S., he was a Farm manager of a large State Farm and then Regional Supervisor of Fruit Production, Ministry of State Farms in Hungary. After

moving to the United States in 1957, he completed his M.S. and was employed by United Fruit Company as a Research Horticulturist in Weehawken, New Jersey. He joined ARS as a Plant Physiologist at Beltsville in 1966. Concurrent with the reorganization, he became Chief, Fruit Laboratory.

His personal research has included identification of pathways responsible for generating precursors for anthocyanin synthesis for the development of red color in apples; proof that leucoanthocyanins, colorless flavonoid compounds, are not involved in anthocyanin production; determination of the role of pentose pathway in fruit respiration; the metabolic disorder of apples, cork spot; calcium movement in apple seedlings; the role of calcium in the metabolic processes of apples; the inheritability of differential calcium accumulation among various apple cultivars; metabolic disorders of carbohydrate metabolism of apples; and russetting disorder of Golden Delicious apples.

Dr. Sheldon Reiser, Chief, Carbohydrate Nutrition Laboratory, NI, was born in New York City and received his B.S. from the City College of New York, his M.S. and Ph.D. from the University of Wisconsin. Following a six-month Post Doctoral appointment at the University of Wisconsin, he became Instructor in Research Medicine and Biochemistry at the Indiana University School of Medicine where he advanced to Associate Professor. Concurrently, he was a Research Biochemist with the Veterans Administration Hospital. He joined ARS as a Nutritional Biochemist in 1973 and became Chief, Carbohydrate Nutrition Laboratory.

His personal research has included the effect of actively transported nonmetabolized sugars on the intestinal transport of amino acids; the cross-inhibition of basic amino acid transport by neutral amino acids; the effects of vitamin E and essential fatty acid deficiencies on sugar and amino acid transport; the properties of leucine transport by isolated epithelial cells; the inhibition of amino acid uptake by adenosine triphosphate in isolated epithelial cells; stimulation of basic amino acid uptake by certain neutral amino acids; and the properties of sodium ion dependent and sodium ion independent lysine uptake. He has teaching experience in enzymology, nutrition, gastrointestinal physiology, metabolism, and biochemistry.



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BELTSVILLE, MARYLAND 20705

NOTES FROM THE DIRECTOR

No. 42

December 12, 1974

Employee Activities

Further Adventures of the Astromoth - Gypsy moth eggs were included in the biological material orbited into space aboard Skylab III. ASTROMOTH No. 1, an adult female moth, hatched after the eggs were returned to earth. Upon reaching adulthood, she was mated with an earthbound male and scientists at both NASA and USDA are awaiting the hatching of her progeny. The astronauts were Jerry Carr, Ed Gibson, and Bill Pogue, and the ARS scientists involved were W.N. Sullivan, Dora (Holly) Hayes, and M. S. Schechter, Chemical and Biophysical Control Laboratory, AEQI. Pictures of the moth were autographed and exchanged by both astronauts and scientists with notations by each.

Soybean Workshop - On November 20, Drs. Kulik and Yaklich, Seed Quality Laboratory, AMRI, attended a one-day workshop on soybean seed germination, given by the AMS Seed Branch at BARC-East. They were particularly interested in learning about classifying soybean seedlings as "abnormals". This type of seedling is often encountered when germination tests are made of low quality seeds such as those from weathered or frost-damaged lots.

Task Force Participation - Dr. Jack R. Plimmer, Pesticide Degradation Laboratory, AEQI, participated in a Task Force organized by the Council for Agricultural Science and Technology (CAST). The purpose of the Task Force was to prepare a report on the phenoxy herbicides (their properties, use and agricultural value), for use by legislators in Wisconsin and other states. The report deals briefly with the history, chemistry, toxicology, biological activity, economic implications, application and use of the phenoxy herbicides.

Collection Studied - T. J. Spilman, Systematic Entomology Laboratory, visited the American Museum of Natural History, New York City, to study the collection of Tenebrionidae and Ptinidae, both containing many stored product pests.

Dairy Products Processing Plant Remodeling Program Underway - Charles F. Stewart, Dairy Marketing Specialist, studied the plant operations of a dairy products processing firm in Covington, Tennessee, to determine the changes needed to increase efficiency and provide for future growth. The major factors that brought about the need for change were increasing volume, the introduction of new product processing, and the realignment and consolidation of the firm's processing operations. The firm's total operations included 3 separate processing plants and 2 distribution outlets. Study findings showed that by combining 2 of the processing plants and remodeling the home plant in Covington future needs could be met. Remodeling plans and improved operating methods were developed for processing and handling a 50 percent increase in volume, as well as providing for long range growth. Most of the study recommendations have already been adopted.

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SEL Seminar on Virginia Biotic Areas - In a seminar sponsored by the Systematic Entomology Laboratory, IIBIII, Dr. Richard L. Hoffman, Radford College, Radford, Virginia, led a stimulating discussion on "Distributional Patterns in the Biota of Virginia." A specialist on millipedes and widely experienced with the Virginian and adjacent fauna and flora generally, he emphasized the occurrence of northern versus southern biota in the different regions of Virginia. This was the 10th in the seminar series to be held since October 1973.

Air Pollution Plant Damage - Dr. H. E. Heggestad spoke about air pollution plant damage to science teachers attending the National Science Teachers Association Eastern Area Convention in Washington, D.C. He was the botanist on a panel entitled "Atmosphere Attitudes and Activists," with a chemist, physician, science teacher, and a political activist.

Insect Collection Donated - Dr. F. Christian Thompson, Systematic Entomology Laboratory, has donated his collection of syrphid flies to the U.S. National Museum, Smithsonian Institution. The collection is worldwide in scope and contains some 1,032 species, about 100 types, and close to 10,000 specimens. It is considered to be the sixth or seventh largest collection of its kind in the world, rivalled or surpassed only by the British Museum, Canadian National Collection, the American Museum, the Zoological Institute at Leningrad, and the National Museum. This gift will not only increase the size of the national collection but will also significantly broaden its diversity.

New Employee - Dr. Johan Le Roux, Associate Professor, Department of Soil Science, University of Natal, South Africa, joined the staff of the Agricultural Chemicals Management Laboratory, AEQI, on November 11. Dr. Le Roux will spend 6 months of his sabbatical leave working on the chemistry of cadmium in soil, as part of the project on the environmental behavior of heavy metals in this Laboratory. His visit is partly supported under the contractual research agreement between ARS and the Energy and Research and Development Administration (late AEC).

"Systematics, Zoogeography, and Flies" was the subject of a talk given by Dr. F. C. Thompson, Systematic Entomology Laboratory, at a seminar sponsored by the SEL on October 24 at the Museum of Natural History in Washington. Dr. Thompson discussed the newer trends in research on systematics and the origins and relationships of the Diptera.

Special BARC Program for Orchid Growers - On Saturday, November 16, over 40 members of the National Capitol Orchid Society toured research facilities in the Plant Stress Laboratory, the Ornamentals Laboratory, and the Light and Plant Growth Laboratory. Researchers participating in the program included Dr. Meryl N. Christiansen and Dr. Donald T. Krizek, Plant Stress Laboratory; Dr. Roger Lawson and Mr. Shafgat Ali, Ornamentals Laboratory; and Dr. Gerald Carlson and Mr. Herschel Klueter, Light and Plant Growth Laboratory.

Invited Papers

Symposium Speaker - Dr. Eliot Epstein, Biological Waste Management Laboratory, AEQI, was invited to be the principal speaker at a Symposium on "Handling Sewage Waste from New Hampshire Towns and Cities." The symposium was sponsored by the Institute of Natural and Environmental Resources and the New Hampshire Cooperative Extension Service at Durham, New Hampshire.

"What USDA Does in Pesticide Research" was the subject of two invitational talks given by Dr. Philip C. Kearney, Chief, Pesticide Degradation Laboratory, AEQI, before the Hazardous Materials Advisory Committee, EPA in Crystal City, Virginia, on November 18, and before the Insecticide Society of Washington at the University of Maryland on November 20. Dr. Kearney first developed this talk at the request of EPA for their Alternative Chemicals Program Symposium at Denver in September. The talk covers manpower, funding, and locations involved in USDA pesticide research, as well as major accomplishments in both the biological and chemical pest control research programs.

"Action of Visible Light in Prevention and Determination of Diapause in the European Corn Borer and Codling Moth" was the title of an invitational paper presented by Dr. D. K. Hayes, Chemical and Biophysical Control Laboratory, at the 24th Annual Conference of the Bureau of Biological Research, Rutgers, The State University. The Conference was entitled Research Aspects of Biological Clocks and covered theoretical and practical aspects of the study of biological rhythms.

BARC SCIENCE SEMINAR

Dr. Philip Handler, President of the National Academy of Sciences, recently paid a visit to the Beltsville Agricultural Research Center. After a brief tour of laboratories at BARC, Dr. Handler presented an eloquent but sobering seminar on his views of the current world food situation. Dr. Handler delighted his audience by recalling several amusing incidents from his career that concerned early problems associated with gaining approval for the nutritional fortification of food. The tone of his talk, however, became more serious when he discussed the shortages of food faced by the world today. In his opinion, increased sums of foreign aid will be required to bring the developing nations of southeast Asia into the family of industrialized countries.

Honors and Awards

Dr. R. S. Isenstein, Non-Ruminant Helminthic Diseases Laboratory, API, was elected President of the Helminthological Society of Washington, for the calendar year 1975. Dr. A. Morgan Golden, Nematology Laboratory, PPI, became Vice President and Dr. W. R. Nickle, Nematology Laboratory, began a second term as Corresponding Secretary-Treasurer. Dr. Golden was also elected to the Board of Trustees and as Secretary-Treasurer of the Brayton H. Ransom Memorial Trust Fund which was established in 1936 by the Helminthological Society of Washington in honor of Dr. Ransom, a distinguished scientist who made major contributions in animal disease research.

Situations and Events

Early in September Dr. A. Morgan Golden, Nematology Laboratory, PPI, made final identification of Heterodera avenae (the oat cyst nematode) on the basis of specimens submitted by a scientist at Oregon State University. This is the first known occurrence of this cereals pest in the United States and

was found on oats and volunteer wheat in a large field in Washington County, Oregon. Other hosts include barley, rye, and about 20 kinds of grasses. The oat cyst nematode occurs in about 18 countries, ranging from Russia, several European countries, Canada, South Africa, India, to Australia where yields in infested fields were reduced on an average of 56% for oats, 36% for wheat, and 20% for barley. In response to the threat posed by the oat cyst nematode to production of our major small grains, ARS and APHIS, in cooperation with the State of Oregon, initiated as soon as possible various appropriate actions, including surveys and testing of germplasm for resistance.

Completion of Contract - In full completion of a USDA-ARS contract, Dr. Cecil H. Wadleigh, Consulting Plant Physiologist, Hydrograph Laboratory, has submitted a 257-page report entitled, "A Quantitative Analysis of Plant Growth: The Effect of Environmental Stresses on Foliar Expansion of Castor Beans." In this comprehensive report, Dr. Wadleigh examines the complex interrelationships among measured values of solar radiation, temperature, matric suction, and osmotic pressure of the soil solution as they affect leaf area and elongation. Extensive statistical analyses allowed the quantitative expression of these environmental factors on growth response. A limited number of copies of this report are available through Dr. W. A. Raney, National Program Staff.

Visitors From:

England - D.G.H. Halstead of the Pest Infestation Laboratory, Slough, England, visited T.J. Spilman, Systematic Entomology Laboratory, for discussions of stored-product pests in the beetle families Tenebrionidae and Ptinidae. Also discussed were common interests in dermal glands of beetles and introduction of pests through commerce.

Poland - Dr. Michal W. Brzeski from the Vegetable Crops Research Institute, Skierniewice, Poland, Principal Investigator of PL 480 project "Studies on resistance of carrot to Meloidogyne hapla infestations," recently visited the United States and spent two days visiting with Dr. B. Y. Endo, the Cooperating Scientist, and scientists in the Nematology Laboratory. He also presented a seminar on "Nematode Research in Poland."

Sweden - On November 25, Dr. Milan Simak, Associate Professor of Seed Research, Royal College of Forestry, Stockholm, presented a seminar entitled "A survey of seed research at the Royal College of Forestry, Stockholm." On November 26, he visited with personnel in the Agricultural Marketing Research Institute, Plant Genetics and Germplasm Institute, Plant Physiology Institute, and Agricultural Environmental Quality Institute. Dr. Simak's visit to Beltsville was arranged by Dr. John Romberger, Forest Physiology Laboratory and Mrs. Vivian K. Toole, Seed Quality Laboratory.

Arizona - A recent visitor to the Coleoptera Research Group, Systematic Entomology Laboratory, was Dr. R. S. Beal, Jr., Graduate Dean, Northern Arizona University, Flagstaff. Dr. Beal is a recognized world authority on the beetle family Dermestidae (hide and carpet beetles). He was brought here as part of the Visiting Scientist Program of SEL to assist in curating the collection of Dermestidae at the U.S. National Museum, and to pursue his own research in the Dermestidae.

West Virginia - The Animal Parasitology Institute was visited November 20 by a class of 15 students and their professor, Dr. Bell, from Shepherds College, Sherpherdstown, West Virginia. The class of premedical students toured the National Parasite Collection with Dr. Ralph Lichtenfels.

Alabama - Mr. John Litton, Area Identifier for APHIS at Mobile, was a visitor to the Systematic Entomology Laboratory. Mr. Litton consulted with various specialists at the laboratory on problems of recognizing important pest insects that are likely to be collected in his area or intercepted at the port of entry at Mobile.

Colorado - Mr. Dorris Clark of the National Seed Storage Laboratory, Fort Collins, Colorado, visited with staff personnel at BARC research laboratories to discuss plant introduction, preservation of germplasm and seed storage research.

Ohio - Mr. Adelson Paschoal, a Ph.D. student at Ohio State University, visited the Systematic Entomology Laboratory to study the oribated mite collection. Mr. Paschoal has been a student at the University of Sao Paulo, Piracicaba, Brazil.

New York - Dr. Mercedes Delfinado of the New York State Museum at Albany visited the Systematic Entomology Laboratory to study the collection of terrestrial soil mites in connection with her studies of mites in New York State.

Biographical Sketches

Dr. Raymond V. Rebois, Chief, Nematology Laboratory, PPI, was born in San Francisco and received his A.B. from San Jose State University (1950) and his Ph.D. from Auburn University (1971). He joined ARS as a Biological Aid at Orlando, Florida in 1956. He transferred to Auburn, Alabama, as a Nematologist in 1965 and to Beltsville as a Research Plant Pathologist (Nematologist) in 1970.

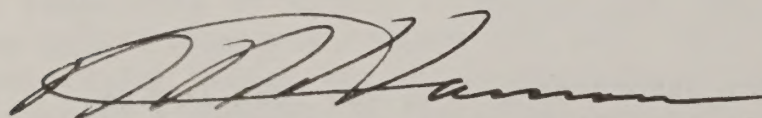
His personal research has included screening chemicals for potential nematocidal activity, conducting a comprehensive survey on all types of nematodes associated with soybeans in a multi-state area. He led teams that: found the first resistance to Rotylenchulus reniformis in tomatoes, and in wild and commercial soybean varieties; demonstrated that R. reniformis could reduce soybean and potato yields and quality; demonstrated ultrastructural and related physiological changes in resistant and susceptible soybean roots following infection by R. reniformis.

Dr. Rebois holds the rank of Commander in the U.S. Navy Reserve and is currently Assistant Chief of Staff for Training and Liaison between all Naval Air Reserve Units and Squadrons in the Washington, D.C. area and NATC Patuxant River. He recently became Chief, Nematology Laboratory, and has responsibility for the broad program of the Laboratory.

Norman W. Hooven, Jr., Leader, Animal Operations Unit, APGI, was born in Pennsylvania and received his B.S. from Pennsylvania State University, his M.S. from the University of Maryland. He joined ARS at Beltsville as a Herdsman in 1951. He became a Research Scientist following completion of his M.S. Concurrent with the reorganization, he became Leader, Animal Operations Unit.

His personal research has included development of freeze branding for animal identification; an extensive 10-year study on the genetic aspects of feed efficiency; characterization of body weight and weight changes during lactation of dairy cows; determination that Holstein steers gained more rapidly, more efficiently, and produced more separable lean than beef or dual-purpose steers; and the application of a modified regression procedure for predicting complete lactation production from early part-lactation data. He has authored or co-authored 32 scientific papers and presented nine invitational papers.

Mr. Hooven is recognized within the dairy and beef cattle industry as an authority on animal identification and freeze branding. In his present assignment, he is responsible for producing support for Beltsville scientists conducting research on dairy cattle, poultry, and swine, and is responsible for management of the BARC Granary. In addition to supervising a large staff involved in the care and maintenance of this large number of animals, he is concerned with the allocation of animal resources to the various projects, assignments of space, labor, farm buildings, supplies, feed and farm operations. He is intimately involved in comprehensive planning and design of many experiments in this capacity.



A. A. Hanson, Director
Beltsville Agricultural Research Center

UNITED STATES DEPARTMENT OF AGRICULTURE
AGRICULTURAL RESEARCH SERVICE
NORTHEASTERN REGION
AGRICULTURAL RESEARCH CENTER
BELTSVILLE, MARYLAND 20705
NOTES FROM THE DIRECTOR

No. 43

December 27, 1974

Employee Activities

Fifth Annual Research Plant Engineering Conference - R. L. Almond, Sr., Head, Division of Operations, and D. J. Milano, Chief, Engineering & Maintenance Branch, DOBA, attended the conference held at the Salk Institute, La Jolla, California. Mr. Almond and Mr. Milano made a presentation on "Work Management Systems" to familiarize facilities engineers with techniques and considerations for planning, scheduling, and controlling work assignments. They also led a panel discussion on "Energy Conservation." The conference was attended by plant engineers from ARS, Government, State, and industry.

Voice of America Taping - Voice of America recently taped an interview with Dr. L. Knutson, Chairman, IIBIII, in regard to his research visit to Brazil during October and November. In cooperation with scientists at the University of Brazilia, Dr. Knutson is conducting studies of the biology and taxonomy of snail-killing flies in preparation for an attempt at biological control of snails that are intermediate hosts of flatworm parasites causing human schistosomiasis.

Workshop Attendance - Dr. E. E. Terrell and Dr. J. A. Duke, Plant Taxonomy Laboratory, attended a workshop of ICOMPT (Intersociety Committee on Plant Terminology) in Frederick, Maryland.

Donation - The Plant Taxonomy Laboratory donated to the American Cancer Society more than \$700, proceeds from their publication PAPAVERACEOUS POLYCLAVE, which appeared in the third volume of Critical Reviews in Toxicology.

Invited Papers and Talks

Future Farmers of America Club - Clarence S. Britt, Assistant to the Director, BARC, was invited to talk to the Future Farmers of America Club at the University of Maryland Eastern Shore. His talk was on Research Progress at the Beltsville Agricultural Research Center. At this same time, Mr. Britt donated his extensive collection of agricultural journals and magazines to the University Library in order to have them available for use by the students. This donation was made at the suggestion of Dr. J. G. Wutoh, Vice Chancellor for Academic Affairs, UMES.

United Nations Workshop - Dr. James A. Duke, Chief, Plant Taxonomy Laboratory, was invited to speak on the taxonomy of Papaver bracteatum at a United Nations workshop recently.

Cooperative Activities

Taxonomy Studies presented - Dr. C. R. Gunn, Plant Taxonomy Laboratory, worked on Medicago taxonomy with Dr. Willis Skrdla and Herbert Spencer at the Plant Introduction Station, Ames, Iowa. Results of their work were presented at the Alfalfa Conference and ARS Alfalfa Workshop at Tucson and Phoenix, Arizona.

Northeast Regional Research Project NE-2 - Dr. Charles A. Kiddy of the Reproduction Laboratory recently attended the annual meeting of the NE-62 Technical Committee at Pennsylvania State University. Dr. Kiddy is the ARS representative in this project which is entitled "Relationships between genetic markers and performance in dairy cattle." The project involves nine state experiment stations and ARS and is designed to study relationships among simply inherited genetic markers in blood and milk and production and reproduction traits. Data on 5100 cows have been collected and analyses are underway. Dr. Kiddy has served as Chairman, Vice Chairman and Secretary of the Technical Committee and will again serve as Vice Chairman during the final year of the project during which analyses will be completed and publications prepared. He also serves as Chairman of the Reproduction Sub-Committee.

BARC SCIENCE SEMINAR

Is vitamin D a vitamin or a hormone? - Dr. Hector F. DeLuca, Chairman of the Department of Biochemistry, College of Agriculture and Life Sciences, University of Wisconsin, recently presented a seminar at Beltsville summarizing research which demonstrates that vitamin D is a prohormone that gives rise to at least one and possibly more hormones. In his talk "The Vitamin D-based Endocrine System" Dr. DeLuca pointed out that the kidney can be regarded as the endocrine organ which secretes 1,25-dihydroxy-vitamin D₃. This vitamin D metabolite functions in intestine and bone to mobilize calcium and phosphorus. The synthesis of this hormone is stimulated by low blood calcium or low blood phosphorus. As a result of this basic research, the cause of certain vitamin D-resistant bone diseases in humans can be explained by the inability of some individuals to synthesize these active vitamin D metabolites. Now there appears to be hope for such persons since various vitamin D analogs or derivatives hold promise for the chemotherapy of these bone diseases.

Visitors

China - Members of Light & Plant Growth Laboratory, Plant Hormone & Regulators Laboratory, Plant Nutrition Laboratory, and the Plant Stress Laboratory met with the Plant Photosynthesis Delegation from the People's Republic of China for discussions of mutual research problems. The delegation was composed of the following: SHEN Yun-Kang, Head of the Delegation and Head of the Photosynthesis Laboratory, Shanghai Institute of Plant Physiology, together with FENG Yin-Fu, YEN Lung-Fei, and K'UANG T'ing-Yun of the same Institute; WEI Chia-Mein, Deputy Head of the Physiological and Biochemical Laboratory, Institute of Botany, Chinese Academy of Sciences, Peking; LI Liang-Pi of the Photosynthesis Laboratory, Shanghai Institute of Plant Physiology; CHANG Ch'i'Te and CHOU Yuen-Chun of the Physiological and Biochemical Laboratory, Institute of Botany, Chinese Academy of Sciences, Peking. Mr. Robert Liu, Light & Plant Growth Laboratory, acted as interpreter during the one-half day session with the Chinese delegation.

The Netherlands - Dr. Frans J.E.M. Koppers, Department of Organic Chemistry of the University of Utrecht, The Netherlands, visited with Dr. Philip G. Vincent of the Pesticide Action Laboratory, from December 1 to 6. The purpose of Dr. Kopper's visit was to evaluate collaboratively several analytical procedures for determining the thebaine content of Papaver bracteatum which is being studied by a Working Group of the United Nations, for its feasibility as a crop source of the alkaloid.

Biographical Sketches

Dr. Russell L. Steere, Chief, Plant Virology Laboratory, PPI, was born in Ann Arbor, Michigan, and received his A.B., M.S., and Ph.D. from the University of Michigan. While a student at Michigan, he served as Research Assistant, Department of Physics. Following completion of his Ph.D. he worked at the Rockefeller Institute for Medical Research working on purification and electron microscopy of plant viruses. His next assignment was with the University of California at Berkeley, where he continued studies on virus purification and development of new techniques in electron microscopy. He joined ARS at Beltsville in 1959 as a Botanist and Leader, Plant Virology Laboratory. Concurrent with the reorganization, he became Chief, Plant Virology Laboratory.

His personal research has included development of new techniques for the purification of viruses and sub-cellular components and new methods for the preparation of biological specimens for electron microscopy. He originated the freeze-etch technique and has improved the freeze-etch, freeze-fracture, frozen surface replica, and freeze-dry methods of preparing specimens for high resolution stereo electron microscopy.

He is a Fellow of the American Phytopathological Society. He received a Certificate of Achievement Award from Walter Reed Army Institute of Research, a USDA Superior Service Award, and the Ruth Allen Award of the American Phytopathological Society. He is a member of and has held offices in professional and Honorary Societies and has more than 85 publications to his credit.

Dr. Gerald E. Carlson, Chief, Light & Plant Growth Laboratory, PPhI, was born in Nebraska and received his B.S. and M.S. in Agronomy from Iowa State College. In 1959 he joined ARS at the U.S. Regional Pasture Research Laboratory at University Park, Pennsylvania, where he worked on forage physiology. He was also a full time Graduate student at the Pennsylvania State University where he completed his Ph.D. in 1963. In 1963 he transferred to Beltsville, continuing with Humid Pasture and Range Investigation of the Forage and Range Research Branch. In 1966 he became Investigations Leader and since reorganization has been Chief, Light and Plant Growth Laboratory.

His personal research has been in the area of plant and animal response to environment with major emphasis on physiology of forages, specifically photosynthesis. He had developed improved techniques for rapidly measuring photosynthesis and has selected genotypes of alfalfa and orchardgrass that differ for photosynthetic rate. In 1971 he received the Japanese Research Grant for Foreign Scientists and spent 7 months conducting physiological and

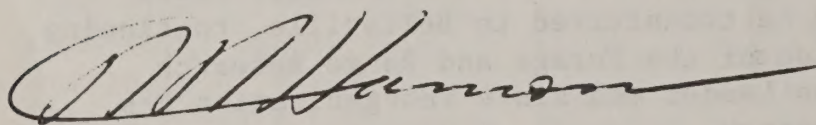
morphological research in the Legume Breeding Laboratory at the National Agricultural Experiment Station in Sapporo. He also consulted with scientists and administrators on the development of a forage-livestock industry in Japan.

Dr. James A. Duke, Chief, Plant Taxonomy Laboratory, PGGI, was born in Alabama and received his B.A., M.A., and Ph.D. from the University of North Carolina. His research career reflects diversification rather than specialization, first as a Teaching Assistant at the University of North Carolina; then as a Mycological Assistant at Fort Detrick; next advancing from Research Associate to Assistant Curator at the Missouri Botanical Garden; then joining ARS at Beltsville in 1963 as a Botanist, New Crops Research Branch; next leaving ARS to become Field Ecologist with Battelle's Columbus Laboratories in Panama and Colombia; and rejoining ARS at Beltsville in 1971. Concurrent with the reorganization he became Chief, Plant Taxonomy Laboratory.

Dr. Duke's personal research has included the Sandhill Flora of the Carolinas; the genus Drymaria; the new South American genus Sanango; Flora of Panama, Medicinal Plants of Peru; the food chains for the Choco and Cuna Indians, Blacks, and Spaniards in Isthmian America, the ecological consequences of potential nuclear detonations on Amchitka Island; Alaska; and on the Isthmus of Panama; the opium poppy and the cocaine plant; and conducting ecological, ethnobotanical, geographic, and systematic research on unusual crop species.

Dr. Lowell T. Frobish, Chief, Non-Ruminant Animal Nutrition Laboratory, NI, was born in Flanagan, Illinois, and received his B.S. from the University of Illinois, his M.S. and Ph.D. from Iowa State University. Prior to completion of his Doctorate, he was employed as a Research Associate at Iowa State. He joined ARS as a Research Animal Husbandman at Beltsville in 1967. Concurrent with the reorganization, he became Chief, Non-Ruminant Animal Nutrition Laboratory.

Dr. Frobish's personal research has included protein and energy intake levels for gestating swine; utilization of supplemental fat in diets of young piglets; effect of energy intake on estros synchronization of gilts; effect of age and diet on pancreatic and serum lipase activity of swine; glucose utilization by neonatal pigs; hypoglycemic condition in pigs after birth; fiber in laying hens diet and cholesterol content of eggs; and lipogenesis in swine selected for backfat thickness.



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